

**AN ASSESSMENT OF THE AVIFAUNA OF THE AREA
BETWEEN DAWESVILLE AND BINNINGUP, SOUTHERN
SWAN COASTAL PLAIN**



New Holland Honeyeater – Photo: G Porter

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INTRODUCTION

The only historical bird report for the area between Mandurah and Bunbury is that of Serventy (1930) from ten days recording birds in the area between Mandurah and Lake Clifton in January/February 1928 and from when he was a member of a group which walked from Mandurah to Bunbury in January 1929. Despite this paucity of actual publications on the region, birds are a relatively well understood faunal group within this part of the Swan Coastal Plain because of the availability of a number of studies which provide regional context on distribution and status, especially Alexander (1921), Dell *et al.* (2002), Hale and Butcher (2007), Harvey *et al.* (1997), How (1978), How and Dell (1989, 1993), How *et al.* (1996), Johnstone and Storr (1998, 2004), Sedgwick (1940, 1973), Serventy (1948), Serventy and Whittell (1976), Storr (1991), Storr and Johnstone (1988), and Whitlock (1939).

As discussed in Government of WA (2000) many non-passerine bird species have decreased in abundance and distribution on the Swan Coastal Plain since European settlement. Some of the waterfowl species and most of the occupants of lake and swamp edges have suffered serious reductions as these habitats have been changed or cleared. Ducks such as the Australasian Shoveler and Hardhead, the Little, Black and Australasian Bitterns, and the Dusky Moorhen have undergone significant declines. Birds of prey including the Square-tailed and Whistling Kites, Brown Goshawk and Collared Sparrowhawk, and habitat-specialist species like the Painted Button-quail and Brush Bronzewing have declined with habitat removal.

Similarly, nearly half of the passerine bird species known from the Swan Coastal Plain have decreased in abundance since European settlement. Nearly all of the insectivorous and nectarivorous species have declined as a direct result of the clearing of the natural vegetation. Some of these species are absent from many parts of the Swan Coastal Plain where clearing for agriculture or urban and industrial areas has been most severe. These include the Western Yellow and Scarlet Robins, Golden Whistler, Grey Shrike-thrush,

Weebill, Inland, Yellow-rumped and Western Thornbills, White-browed Scrubwren, Southern Emu-wren, Splendid Fairy-wren, Varied Sittella, Rufous Treecreeper, Tawny-crowned, Western White-naped, New Holland and White-cheeked Honeyeaters, Black-faced and Dusky Woodswallows and the Grey Currawong. Most still occur in the adjacent Darling Scarp and/or Darling Plateau and the more extensive uncleared near-coastal woodlands and coastal shrublands south of the Mandurah area.

The purpose of this report is to examine the current status of birds in that part of the southern Swan Coastal Plain which lies between Dawesville and the Leschenault Estuary and from the coast inland to the Old Coast Road (hereafter called the Dawesville to Binningup study area), to review historic changes, and to consider the overall significance of the study area for birds in the context of the wider Swan Coastal Plain.

The northern boundary of the study area is Tim's Thicket Road and the southern boundary is Buffalo Road (Figure 1). The study area includes Yalgorup National Park including major lakes (Lake Clifton and Lake Preston) and other wetlands of international importance which are part of the Peel-Yalgorup Ramsar site, regionally significant Tuart woodlands, as well as patches of uncleared vegetation, semi-cleared farmlands and the coastal townships of Preston Beach, Myalup and Binningup.

This report on the avifauna is part of a series of studies which assess the fauna values of the Dawesville to Binningup study area. Other fauna groups studied included non-volant mammals (Hyder and Dell 2009), bats (Bullen 2009) and herpetofauna (How *et al.* 2009).

METHODS

Data for this report were compiled from two surveys conducted by us: one undertaken between January and July 2009 and the second undertaken between 2003 and 2008. These surveys are outlined below.



Figure 1: Map showing the Dawesville to Binningup study area.

- 2009 survey. This survey consisted of repeated survey of twelve quantitative sites comprising five sites in the north of the study area, two in the middle of the study area, and six (including one linear transect) in the southern portion of the study area. The location of each of these sites is shown on Figure 2 and described in Appendix 1. Additional data were collected from two opportunistic sites (shown on Figure 2 and described in Appendix 1) and surveys of road transects throughout the study area (Figure 2) which recorded all birds sighted within road-verge vegetation and adjacent farmland or vegetation remnants contiguous with roadside vegetation. Survey dates were: 29-30 January, 10-13 March, 18-19 March, 4-6 May, 28-29 May, 9 July. Data are included in Appendix 2.

Quantitative sampling sites were chosen to represent the major landforms within the study area. Detailed descriptions of the vegetation of quantitative survey sites are presented in Appendix 1. The period of survey was generally a couple of days each month covering the six month period between January and July. The census method for the quantitative sites was to record all birds seen or heard during a 10-15 minute recording period in a 100 metre radius based on a variable circular-plot as described by Reynolds *et al.* (1980). The linear transect was driven slowly with frequent stops to record calling birds. Recording in opportunistic sites and along roads was undertaken to provide additional spatial information on habitats within the study area (Figure 2).

- Surveys between 2003 and 2008. Data were collected during site visits to Binningup and the area south of White Hill road and road transect surveys throughout the study area (Figure 3) which recorded all birds sighted within selected sites and road-verge vegetation and adjacent farmland or vegetation remnants contiguous with roadside vegetation. Survey dates were: 30 October 2003, 25 October 2006, 14 June 2007, 5 October 2007, 16 and 17 July 2008. Data are included in Appendix 2.

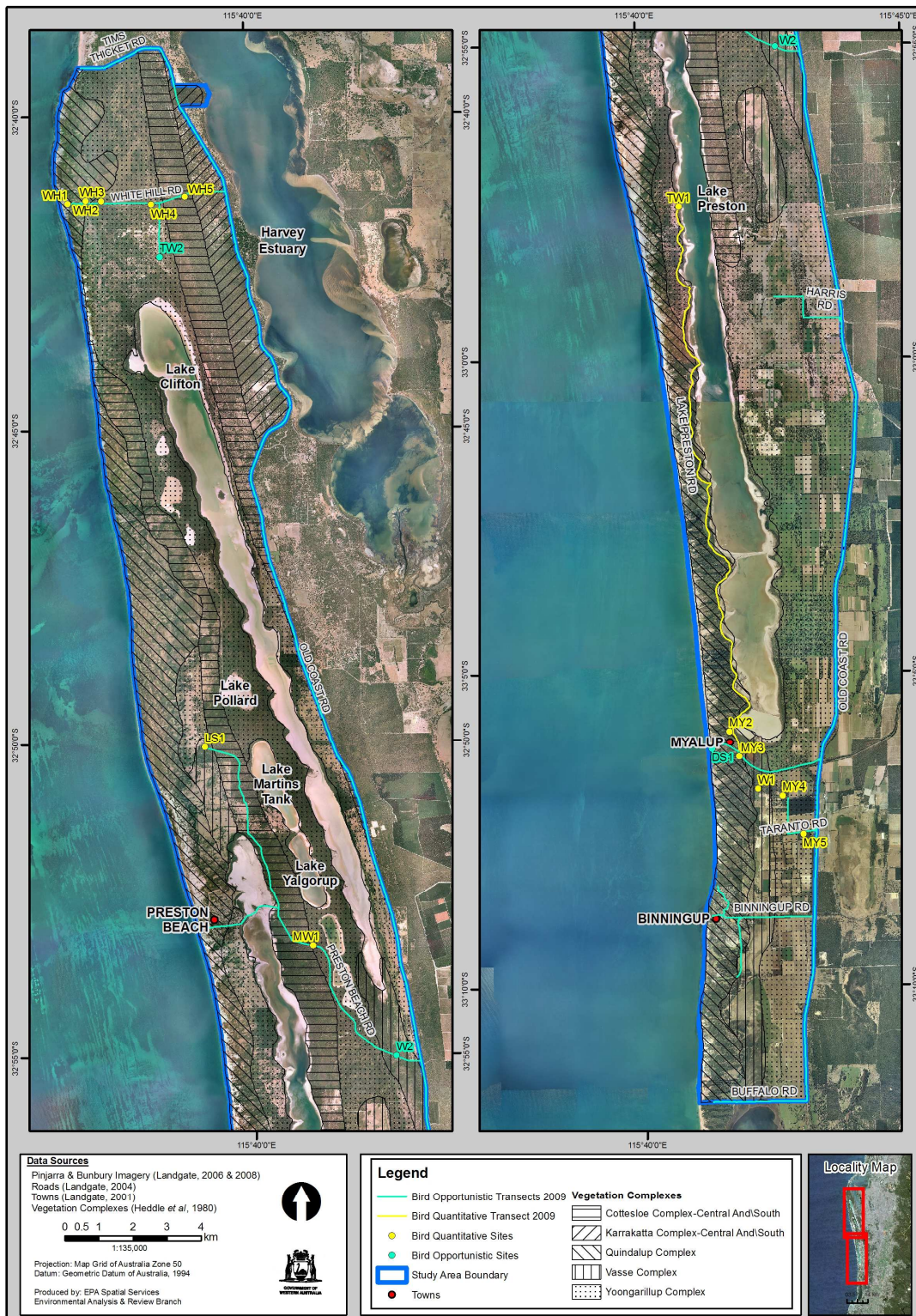


Figure 2: Map showing location of bird survey sites during 2009



Figure 3: Map showing road transects between 2003 – 2008 bird survey.

Published literature on the study area (Serventy 1930, Birds Australia 2005, Hale and Butcher 2007) and unpublished site-based consultant reports for development proposals (Alan Tingay and Associates 1998, Bamford Consulting Ecologists 2008, RPS and Coffey Environments 2007, Western Wildlife 2007) were also accessed to supplement information collected in the current survey.

RESULTS

A total of 174 species of birds are known from the study area. These comprise those species recorded in the surveys from 2003 to 2009 and an additional 70 species of primarily wetland dependent birds recorded by Hale and Butcher (2007) or Serventy (1930).

Presented below is the list of the 174 species of birds currently or previously known from the Dawesville-Binningup study area. Nomenclature follows Christidis and Boles (2008). For each species we summarise its likely status based on the data available, not only from the study area but also from the wider region particularly that summarised by Storr and Johnstone (1988). Data from our survey are then outlined, followed by a summary of other data known from the study area (e.g. Serventy 1930; data summarised in Hale and Butcher 2007, and recent consultant reports for development proposals in the study area), and, if relevant, consideration of the conservation significance of populations in the study area. Introduced species are indicated by *.

ANNOTATED LIST

Family Casuariidae

Dromaius novaehollandiae Emu

Conservation significance: Category 4 (Table 1). Uncommon resident. Several records of adults in semi-cleared farmland on east side of Lake Preston and scats recorded in various habitats between Lake Clifton and the ocean mainly in Yalgorup National Park during current survey. Adult birds, sub-adults and scats recorded between Lake Clifton and the

ocean by Alan Tingay and Associates (1998). Serventy (1930) recorded tracks west of Lake Clifton and two birds at south end of Lake Clifton. Previously widespread on the Swan Coastal Plain. Storr and Johnstone (1988) considered it extinct south of Perth on the Swan Coastal Plain except for the ‘coastal area between Dawesville and Kemerton’. The Yalgorup and Kemerton population is now almost certainly isolated from other populations on the Swan Coastal Plain north of Perth and from populations in the Darling Range.

Family Phasianidae

Coturnix pectoralis Stubble Quail

Probably moderately common visitor mostly to farmlands. Status uncertain. Not recorded during current survey as farmland was poorly examined during.

Family Anatidae

Biziura lobata Musk Duck

Conservation significance: Category 3 (Table 1). Common resident on saline lakes within the study area. One record totalling two individuals during current study (Appendix 2) but suitable habitat was poorly examined. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007) where counts (including those on the Peel-Harvey Estuary) of 491 exceeded 2% of the estimated south-western Australia population. Serventy (1930) recorded this species as abundant on Lake Clifton and on Boundary Lake.

Stictonetta naevosa Freckled Duck

Conservation significance: Category 3 (Table 1). Status uncertain. No records for study area, but recorded in the nearby Peel-Harvey Estuary Ramsar site (Hale and Butcher (2007)). Storr and Johnstone (1988) consider that it prefers freshwater wooded lakes and swamps.

Cygnus atratus Black Swan

Common resident on saline lakes within the study area. Also frequent on saturated grasslands throughout farmland in study area during winter. Five records totalling 20 individuals during current study (Appendix 2) but suitable habitat was poorly examined. Recorded breeding on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) recorded flocks on Lake Clifton.

Tadorna tadornoides Australian Shelduck

Common resident and seasonal visitor on saline lakes within the study area. Also common on saturated grasslands throughout farmland in study area during winter. Fifteen records totalling 183 individuals during current study (Appendix 2) but suitable habitat was poorly examined. Recorded breeding on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) recorded this species on Lake Preston and the smaller lakes of the Martin Tank system.

Chenonetta jubata Australian Wood Duck

Uncommon, mainly a seasonal visitor to seasonally saturated pastures and marshy grasslands in semi-cleared farmland throughout the study area. One record totalling three individuals during current study (Appendix 2) but suitable habitat was poorly examined. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007) however not recorded previously by Serventy (1930). See Storr and Johnstone (1988) for increase in abundance on the Swan Coastal Plain since the 1950's.

Malacorhynchus membranaceus Pink-eared Duck

No records in study area but based on Storr and Johnstone (1988) likely to occur especially in summer/autumn on larger bodies of either fresh or saline water. Known from Peel-Harvey Estuary and other wetlands outside the study area (Hale and Butcher 2007).

Anas gracilis Grey Teal

Common resident with increasing numbers during summer/autumn. Occurs on all types of water bodies throughout the study area. Four records totalling 176 individuals during current study (Appendix 2) but suitable habitat was poorly examined. Recorded breeding on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007) with counts (including those on the Peel-Harvey Estuary) of over 25,000 representing 1.2% of the estimated south-western Australia population.

Anas superciliosa Pacific Black Duck

Common resident. Occurs on all types of water bodies and seasonally saturated paddocks throughout the study area. Ten records totalling 63 individuals during current survey (Appendix 2) but suitable habitat was poorly examined. Recorded breeding on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) recorded flocks on Lake Clifton.

Anas rhynchos Australasian Shoveler

Conservation significance: Category 3 (Table 1). Uncommon resident, mainly on deeper vegetated water bodies throughout the study area. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007) with counts (including those on the Peel-Harvey Estuary) of 358 representing 3% of the estimated south-western Australia population.

Aythya australis Hardhead

Conservation significance: Category 3 (Table 1). Uncommon resident, mainly on fresh and brackish waters throughout the study area. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Oxyura australis Blue-billed Duck

Conservation significance: Category 3 (Table 1). Status uncertain, no confirmed records for study area but known from Peel-Harvey Estuary and other wetlands outside the study area (Hale and Butcher 2007). Likely to occur on deeper lakes throughout the study area.

Family Podicipedidae

Tachybaptus novaehollandiae Australasian Grebe

Moderately common resident, on freshwater dams and fresh and semi-saline lakes. Only one record during current study as suitable habitats were poorly examined. Recorded on lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007).

Poliiocephalus poliocephalus Hoary-headed Grebe

Moderately common resident; also flocking in larger numbers March to September on Lakes Clifton and Preston (Storr and Johnstone 1988); Serventy (1930) recorded flocks on Lake Clifton in January. Only one record during current study as suitable habitats were poorly examined. Recorded on most saline and semi-saline lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007).

Podiceps cristatus Great Crested Grebe

Status uncertain. Reported breeding in wetlands in the Yalgorup National Park Ramsar site (Hale and Butcher 2007).

Family Columbidae

**Columba livia* Rock Dove

Uncommon exotic species probably dependent on human provision of food and roosting/breeding resources. One record at food outlet along highway.

**Streptopelia senegalensis* Laughing Dove

Moderately common exotic species probably partly dependent on human provision of food resources. Small numbers present throughout cleared areas, with higher numbers at

dwellings and food outlets along highway and at coastal towns including Preston Beach, Myalup and Binningup.

Phaps chalcoptera Common Bronzewing

Conservation significance: Category 3 (Table 1). Uncommon throughout study area, mainly in shrublands and woodlands with acacias, in road verges and partly cleared farmlands. Aggregating at watering points especially those in farmland and visiting towns to drink. 19 records totalling 27 individuals during current survey (Appendix 2). This water requiring granivore has undoubtedly increased since the provision of permanent water in farmlands and towns. Not recorded by Serventy (1930).

Phaps elegans Brush Bronzewing

Conservation significance: Category 3 (Table 1). Status uncertain. Recorded at Preston Beach in 1959 by Storr and Johnstone. For comments on decline on the Swan Coastal Plain see Storr and Johnstone (1988).

Ocyphaps lophotes Crested Pigeon

Uncommon, mainly in partly cleared farmlands in study area and visiting watering points to drink. Three records totalling five individuals during current survey (Appendix 2). A recent colonizing species extending its range down the Swan Coastal Plain, not recorded in the region of the study area before the early 1980's (Storr and Johnstone 1988 considered its southward extent in 1978 was Forrestdale).

Family Podargidae

Podargus strigoides Tawny Frogmouth

Conservation significance: Category 4 (Table 1). Status uncertain, probably resident and non-breeding seasonal transient. Occurs in all types of habitats especially woodlands and tall shrublands. Nocturnal birds were poorly sampled, but two records during current survey (Appendix 2) including a shell of a recently hatched egg at site MY5. Our records

were mainly opportunistic during nocturnal reptile studies. Serventy (1930) recorded skeletal remains within the study area.

Family Aegothelidae

Aegotheles cristatus Australian Owlet-nightjar

Conservation significance: Category 4 (Table 1). Status uncertain. No confirmed records from the study area. Recorded in wooded country especially on the eastern side of the Swan Coastal Plain by Storr and Johnstone (1988). Like other species that require tree hollows for nesting or roosting, it may have declined or become regionally extinct in woodlands on the western side of the Coastal Plain.

Family Apodidae

Apus pacificus Fork-tailed Swift

Conservation significance: CAMBA/ROKAMBA Agreements (Table 1). A summer/autumn migrant from the northern hemisphere. Not recorded in current survey. Flocks are likely to occur overhead during or after thundery weather especially that associated with tropical cyclones.

Family Sulidae

Morus serrator Australasian Gannet

Occasional visitor over ocean, mainly from autumn through to spring, also rarely visiting Peel-Harvey Estuary and the Yalgorup lakes (Hale and Butcher 2007).

Family Anhingidae

Anhinga novaehollandiae Australasian Darter

Uncommon resident, in permanent wetlands throughout the study area. One record of a single individual during current study. However, suitable habitats were poorly examined. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Family Phalacrocoracidae

Phalacrocorax carbo Great Cormorant

Uncommon resident, in permanent wetlands with open water throughout the study area. Only one record during current study as suitable habitats were poorly examined. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) recorded one individual near the head of the Harvey Estuary.

Phalacrocorax sulcirostris Little Black Cormorant

Moderately common resident, occurs in all types of wetlands with open water throughout the study area. Only one record during current study as suitable habitats were poorly examined. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) recorded a few on Lake Clifton.

Phalacrocorax varius Pied Cormorant

Moderately common resident, mostly along coastal beaches and larger saline lakes throughout the study area. Only two records totalling six individuals during current study as suitable habitats were poorly examined. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) recorded this species on Lake Clifton.

Microcarbo melanoleucos Little Pied Cormorant

Common resident, on all types of wetlands with open water throughout the study area. Only two records totalling three individuals during current study as suitable habitats were poorly examined. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) regarded this species as the common cormorant of all inlets and lakes throughout the region.

Family Pelecanidae

Pelecanus conspicillatus Pelican

Uncommon visitor, mostly on estuaries, larger saline lakes and coastal beaches. Two records totalling three individuals during current survey (Appendix 2). Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) recorded a flock on Lake Clifton.

Family Ardeidae

Ardea pacifica White-necked Heron

Usually a scarce visitor to the area, but occasionally more abundant during major irruptions, e.g. 1975 (Dell 1985). Occurs mainly in flooded or water-logged pastures, roadside ditches, partly inundated parts of the Leschenault Estuary, and lakes of the Yalgorup National Park (Hale and Butcher 2007).

Ardea modesta Eastern Great Egret

Conservation significance: JAMBA/CAMBA Agreements (Table 1). Scarce visitor, in all types of wetlands with open water especially those with vegetation in shallow water especially the edges of inundated samphire marshland. Only one record of a single individual during current study, but suitable habitats were poorly examined. Regarded as rare on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). See Storr and Johnstone (1988) for status on this increasingly abundant species on the Swan Coastal Plain.

Ardea ibis Cattle Egret

Conservation significance: JAMBA/CAMBA Agreements (Table 1). Scarce visitor, mainly saline wetlands with inundated samphire marshland and seasonally inundated farmland pastures especially those with livestock. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). See Storr and Johnstone (1988) for status on this increasingly abundant species on the Swan Coastal Plain.

Egretta novaehollandiae White-faced Heron

Moderately common resident on lakes in the Yalgorup National Park (Hale and Butcher 2007) and Leschenault wetlands (where it is abundant in autumn). Also common seasonal visitor (mainly during rainy season) to seasonally wet semi-cleared farmland throughout study area. Eight records totalling 40 individuals during current survey (Appendix 2).

Egretta garzetta Little Egret

Scarce resident. On shallow fresh or saline lakes throughout the study area. See Storr and Johnstone (1988) for review of this species which has naturally colonized since 1965. Breeding locality known from just south of the study area at Australind.

Egretta sacra Eastern Reef Egret

Conservation significance: CAMBA Agreement (Table 1). Scarce resident, on rocky areas along coastline. Also recorded in Peel-Harvey Estuary (Hale and Butcher 2007).

Nycticorax caledonicus Nankeen Night-Heron

Conservation significance: Category 4 (Table 1). Status uncertain. No records but probably resident in suitable wooded wetlands in study area.

Family Threskiornithidae

Plegadis falcinellus Glossy Ibis

Status uncertain, not recorded in current survey. Recorded in Peel-Harvey Ramsar site by Hale and Butcher (2007). See Storr and Johnstone (1988) for history of increase on the Swan Coastal Plain.

Threskiornis molucca Australian White Ibis

Uncommon mainly seasonal in winter and spring (compared to more abundant status on the eastern side of this part of the Swan Coastal Plain where it breeds in wooded wetlands). Occurs mainly in seasonally inundated paddocks and margins of Leschenault

wetlands. Only two records totalling 16 individuals during current study (Appendix 2) which was largely outside the winter/spring period when the species is most likely to visit the study area. This northern species has arrived since 1952 (Storr and Johnstone 1988).

Threskiornis spinicollis Straw-necked Ibis

Uncommon, mainly a seasonal visitor in winter and spring (compared to more abundant status on the eastern side of this part of the Swan Coastal Plain where it breeds in wooded wetlands). Mainly in seasonally inundated paddocks and margins of Leschenault wetlands. Only two records totalling 12 individuals during current study (Appendix 2) which was largely outside the winter/spring period when the species is most likely to visit the study area. See Storr and Johnstone (1988) for arrival since 1892 of this northern species.

Family Accipitridae

Pandion cristatus Eastern Osprey

Conservation significance: Category 3 (Table 1). Scarce resident. Mainly in northern parts of study area on edges of Lake Clifton and Harvey Estuary. Eight records totalling nine individuals during the current study (Appendix 2). We recorded a nest in a large Tuart on edge of highway between Lake Clifton and Harvey Estuary with two chicks on 24 November 2005. The following year on 25 October 2006 we recorded a nest in a large Tuart with a large chick in Newnham Road in a protea plantation at the south end of Lake Clifton. Recorded at lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Elanus axillaris Black-shouldered Kite

Status uncertain, probably only a visitor (mainly summer/autumn) to semi-cleared farmland and coastal dunal shrublands. Three single records during current survey (Appendix 2).

Lophoictinia isura Square-tailed Kite

Conservation significance: Category 4 (Table 1). Uncommon visitor usually in spring and summer. Believed to be scarce on western side of coastal plain but more frequent on the eastern side close to the Darling Scarp (Storr and Johnstone 1988). Our only record during the current study was one coursing close over canopy of Tuart woodlands on west side of Lake Preston.

Haliaeetus leucogaster White-bellied Sea-Eagle

Conservation significance: Category 4 (Table 1). Scarce along the coast. Our only record is one flying along beach near Myalup in June 2006. Recorded at lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Haliastur sphenurus Whistling Kite

Conservation significance: Category 4 (Table 1). Uncommon resident particularly around lakes and wetlands, along the Harvey Main Drain, and in partly cleared farmland during seasonal inundation. Occasionally seen over heathlands. Seven records totalling eight individuals during current survey (Appendix 2). Recorded at Lake Clifton by Serventy (1930).

Accipiter fasciatus Brown Goshawk

Conservation significance: Category 4 (Table 1). Uncommon visitor (probably breeding) and passage migrant throughout the study area. All types of woodlands and partly cleared farmlands. Two records totalling three individuals during current survey (Appendix 2).

Accipiter cirrocephalus Collared Sparrowhawk

Conservation significance: Category 4 (Table 1). Uncommon visitor (probably breeding) and passage migrant throughout the study area. All types of woodland, partly cleared farmlands and tall shrublands. Four records totalling four individuals during current survey (Appendix 2).

Circus approximans Swamp Harrier

Conservation significance: Category 3 (Table 1). Status uncertain, possibly only a visitor to wetlands throughout the study area. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Aquila audax Wedge-tailed Eagle

Conservation significance: Category 4 (Table 1). Scarce throughout the study area, particularly over partly cleared farmland, including close to the coast at Myalup. Mostly recorded overhead and occasionally perched in tall Tuart trees. Seven records totalling 10 individuals during current survey (Appendix 2). Serventy (1930) recorded it in the area between Mandurah and Lake Clifton.

Hieraaetus morphnoides Little Eagle

Conservation significance: Category 4 (Table 1). Scarce throughout the study area, particularly over partly cleared farmland. Mostly recorded overhead and occasionally perched in tall Tuart trees. Four records totalling six individuals during current survey (Appendix 2). See Storr and Johnstone (1988) for note on its colonization of the Swan Coastal Plain since the arrival of the introduced rabbit.

Family Falconidae

Falco berigora Brown Falcon

Conservation significance: Category 4 (Table 1). Scarce resident. Mainly in coastal dunal shrublands and partly cleared farmland. Only one record of a single bird during current survey (Appendix 2). Serventy (1930) recorded occasional individuals in the Lake Clifton area. See Storr and Johnstone (1988) for note on decline throughout the Swan Coastal Plain where it is now listed as a declining species (Government of Western Australia 2000).

Falco cenchroides Nankeen Kestrel

Common resident and seasonal visitor (usually autumn/winter) (Storr and Johnstone 1988). Mainly in partly cleared farmland, coastal dunes, near-coastal shrublands and the edges of major lakes. Eleven records totalling 13 individuals during current survey (Appendix 2).

Falco longipennis Australian Hobby

Status uncertain because of low number of records of this partly crepuscular species. Occurs throughout study area including partly cleared farmland and edge of lakes and wetlands. One record of a single individual during current survey (Appendix 2).

Falco peregrinus Peregrine Falcon

Conservation significance: S4, Category 4 (Table 1). Status uncertain but probably only a scarce visitor. Likely to occur throughout study area including partly cleared farmland and edge of lakes and wetlands. One record of a single individual during current survey (Appendix 2).

Family Rallidae

Porphyrio porphyrio Purple Swamphen

Scarce. Only two records of single individuals during current study as suitable habitats were poorly examined. Our records were in dense wetland vegetation (*Melaleuca raphiophylla* over *Lepidosperma* sedges) at the south end of Lake Preston and in bulrushes in an artificial wetland at the Binningup Golf Course. Recorded on lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007).

Gallirallus philippensis Buff-banded Rail

Status unknown, probably a breeding visitor and passage migrant (see Storr and Johnstone 1988). Likely to occur in grassy areas adjacent to dense wetland vegetation and inundated samphire margins of saltlakes.

Porzana fluminea Australian Spotted Crake

Status uncertain in study area as suitable habitats were poorly examined during this study. Storr and Johnstone (1988) considered it to be uncommon to moderately common in sedges and associated vegetation fringing lakes and estuaries on the Swan Coastal Plain. Recorded on lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007).

Porzana tabuensis Spotless Crake

Status uncertain as suitable habitats were poorly examined during this study. Storr and Johnstone (1988) considered it to be common in sedges and associated vegetation fringing swamps and rivers on the Swan Coastal Plain. Recorded on lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007). Serventy (1930) recorded this species in sedges at a freshwater spring near the Harvey Estuary.

Tribonyx ventralis Black-tailed Native-hen

No records during this study. Likely to be an irregular visitor to freshwaters and nearby grassy areas (see Storr and Johnstone 1988 for status on Swan Coastal Plain). Recorded on lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007).

Gallinula tenebrosa Dusky Moorhen

Conservation significance: Category 3 (Table 1). Status uncertain. Only one record of seven individuals during current study as suitable habitats were poorly examined. Storr and Johnstone (1988) considered it to be moderately common to common in freshwater wetlands with fringing reeds or sedglands on the Swan Coastal Plain. Not recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Fulica atra Eurasian Coot

Common resident and seasonal visitor especially during summer and autumn when wetlands are dry in other parts of the southwest. Occurs on saline and freshwater lakes, the Harvey Main Drain and farm dams throughout the study area. Only two records

totalling four individuals during current study as suitable habitats were poorly examined. Storr and Johnstone (1988) recorded large aggregations (up to 700) on Lake Clifton in autumn. Hale and Butcher (2007) recorded over 17000 individuals on the Peel-Harvey Estuary and lakes in the Yalgorup National Park Ramsar site. Rather surprisingly this species was not recorded between Mandurah and Bunbury by Serventy (1930) or in the Bunbury area by Whitlock (1939).

Family Otididae

Ardeotis australis Australian Bustard

Conservation significance: P4, Category 4 (Table 1). Now probably extinct in region. A pair was noted in the limestone shrubland between Lake Clifton and the Martins Tank wetlands by Serventy (1930) who noted that this was typical habitat for this species in this region.

Family Burhinidae

Burhinus grallarius Bush Stone-curlew

Conservation significance: P4, Category 4 (Table 1). Now probably extinct in region. See Storr and Johnstone (1988) for history of decline on the Swan Coastal Plain.

Family Haematopodidae

Haematopus longirostris Australian Pied Oystercatcher

Scarce. On coastline and larger saline lakes. Occasional pairs recorded on sandy beaches in the current survey. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Family Recurvirostridae

Himantopus himantopus Black-winged Stilt

Uncommon visitor. On wetlands (especially freshwaters) with shallow water including seasonal inundation areas in farmland. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Recurvirostra novaehollandiae Red-necked Avocet

Uncommon to common visitor. On wetlands (especially saline water), mainly on estuaries and larger saline lakes. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Cladorhynchus leucocephalus Banded Stilt

Uncommon to common visitor. On wetlands (especially saline water), mainly estuaries and larger lakes. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Family Charadriidae

Pluvialis fulva Pacific Golden Plover

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Pluvialis squatarola Grey Plover

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Charadrius mongolus Lesser Sand Plover

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Charadrius leschenaultii Greater Sand Plover

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

The above four transequatorial migratory species were all listed from the lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007).

Charadrius ruficapillus Red-capped Plover

Moderately common to very common resident. Mainly on shores of saltlakes and estuaries and along beaches.

Charadrius australis Inland Dotterel

This inland arid species is listed as a vagrant from the lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007).

Euseyonis melanops Black-fronted Dotterel

Uncommon resident, mainly on edge of freshwater lakes and dams throughout the study area. Few records during this survey as these habitats were not targeted.

Thinornis rubricollis Hooded Plover

Conservation significance: P4 (Table 1). Only one record of two individuals during the current survey; but suitable habitat was not adequately sampled. This threatened species has been studied in detail on the lakes in the Yalgorup National Park Ramsar site (Birds Australia 2005; Hale and Butcher 2007). At least some individuals are sedentary and these lakes are very significant breeding areas.

Erythrogonys cinctus Red-kneed Dotterel

Conservation significance: JAMBA/CAMBA Agreements (Table 1).

This transequatorial migratory species is listed from the lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007).

Vanellus tricolor Banded Lapwing

Uncommon to moderately common resident. Mostly in cleared or partly cleared farmland. A colonized species first recorded on the southern Swan Coastal Plain after about 1910 (Storr and Johnstone 1988). Few records during this survey as farmland was not targeted.

Family Rostratulidae

Rostratula australis Australian Painted Snipe

Conservation significance: S1, Category 4 (Table 1). Status uncertain, formerly common, now possibly only a rare visitor if at all. See Storr and Johnstone (1988) for decline on the Swan Coastal Plain.

Family Scolopacidae

Limosa limosa Black-tailed Godwit

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Limosa lapponica Bar-tailed Godwit

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Numenius phaeopus Whimbrel

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Numenius madagascariensis Eastern Curlew

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements, P4 (Table 1).

Xenus cinereus Terek Sandpiper

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Actitis hypoleucos Common Sandpiper

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Tringa brevipes Grey-tailed Tattler

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Tringa nebularia Common Greenshank

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Tringa stagnatilis Marsh Sandpiper

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Calidris tenuirostris Great Knot

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Calidris canutus Red Knot

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Calidris minuta Little Stint

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Calidris ruficollis Red-necked Stint

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1). The lakes in the Yalgorup National Park Ramsar site included 13,259 individuals, or 4% of the known south-western Australian population (Hale and Butcher 2007).

Calidris alba Sanderling

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Calidris acuminata Sharp-tailed Sandpiper

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

Calidris ferruginea Curlew Sandpiper

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1). The lakes in the Yalgorup National Park Ramsar site included 6,260 individuals, or 3.5% of the known south-western Australian population (Hale and Butcher 2007).

Philomachus pugnax Ruff

Conservation significance: JAMBA/CAMBA/ROKAMBA Agreements (Table 1).

The above 17 transequatorial migratory species were all listed from the lakes in the Yalgorup National Park Ramsar site (Hale and Butcher 2007). These lakes and the adjacent estuaries are regionally significant wetlands for this species of waders.

Family Turnicidae

Turnix variegatus Painted Button-quail

Conservation significance: Category 4 (Table 1). Uncommon, in woodlands and tall shrublands throughout the study area. Three records totalling four individuals during current survey (Appendix 2). The unidentified quail recorded by Serventy (1930) east of Lake Clifton are likely to be this species.

Family Laridae

Onychoprion anaethetus Bridled Tern

Conservation significance: JAMBA Agreement (Table 1). Uncommon, mainly along rocky coasts. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Recorded by Serventy (1930) over reefs north of the study area.

Sternula nereis Fairy Tern

Uncommon visitor, along coastlines and on estuaries and large saline lakes. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Gelochelidon nilotica Gull-billed Tern

Uncommon visitor, on estuaries and large saline lakes. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Hydroprogne caspia Caspian Tern

Conservation significance: CAMBA Agreement (Table 1). Uncommon resident, along coastlines and on estuaries and large saline lakes. Two records totalling four individuals along coastline in current survey (Appendix 2). Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007).

Thalasseus bergii Crested Tern

Conservation significance: JAMBA Agreement (Table 1).

Moderately common resident, along coastlines and on estuaries and large saline lakes. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) recorded this species along the ocean but not on the lakes in the study area.

Larus pacificus Pacific Gull

Rare visitor, along coastlines and on estuaries and large saline lakes. Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). However, Storr and Johnstone (1988) considered it to be formerly scarce or uncommon but now regionally extinct due to competition from Silver Gulls.

Chroicocephalus novaehollandiae Silver Gull

Uncommon; along coasts, estuaries and saline lakes. Along the coast it mostly congregates around towns. Ten records in current survey (Appendix 2). Recorded on lakes in the Yalgorup National Park Ramsar site by Hale and Butcher (2007). Serventy (1930) recorded this species at Lake Clifton and along the ocean in the study area.

Family Cacatuidae

Calyptorhynchus banksii naso Forest Red-tailed Black Cockatoo

Conservation significance: VU, S1, Category 3 (Table 1). Uncommon, in woodlands especially those with Jarrah and Marri (where it feeds on the seeds) in the south-eastern parts of the study area. Seven records totalling 23 individuals during current survey (Appendix 2). Based on their data Ron Johnstone and Tony Kirkby (pers. comm.) believe it is probably resident in that part of the study area east of Myalup/Binningup and this population is separate from the population occupying the area around Kemerton.

Calyptorhynchus latirostris Carnaby's Cockatoo

Conservation significance: E, S1, Category 4 (Table 1). Common seasonal visitor (mainly in autumn and winter) and uncommon breeding resident. Mainly in Tuart woodlands (where they rest and roost), woodlands with Marri and *Banksia attenuata* (upon which they feed), pine plantations (where they feed on the seeds of *Pinus radiata*), and shrublands, particularly in the northern part of the study area (where they feed on the seeds of *Dryandra sessilis* and other species). Also visiting *Agonis flexuosa* woodlands to feed on grubs and feeding on the ground in farmland on seeds of *Erodium* species. Fifteen records totalling 359 individuals during current survey (Appendix 2). The largest flock size has been reported in March with counts of 1265 resting in Tuarts (Ron Johnstone and Tony Kirkby, pers. comm.). Breeding reported at Lake Clifton and Tuart Grove (Johnstone and Kirkby, pers. comm.). The study area is a significant feeding area for non-breeding flocks from breeding areas elsewhere and is also a known breeding area for resident birds.

Calyptorhynchus baudinii Baudin's Cockatoo

Conservation significance: VU, S1, Category 4 (Table 1). Uncommon, a non-breeding seasonal visitor mainly to Tuart woodlands in southern part of the study area. Three records totalling 36 individuals during current survey (Appendix 2).

Eolophus roseicapillus Galah

A recent colonizing species, uncommon throughout the study area, particularly in partly cleared farmlands and Tuart woodlands. It also visits shrublands, coastal dunes and towns and visits various watering points to drink. Breeding in Tuarts throughout the study area. 30 records totalling 84 individuals during current survey (Appendix 2). Not recorded in the region of the study area before the 1980's (Storr and Johnstone 1988 considered its southward extent in 1988 was Mandurah). This species has now extended its range down the entire Swan Coastal Plain to Dunsborough.

Family Psittacidae

Glossopsitta porphyrocephala Purple-crowned Lorikeet

Conservation significance: Category 4 (Table 1). Scarce blossom nomad. Storr and Johnstone (1988) considered it locally moderately common on the Swan Coastal Plain from February to June when Marri was flowering. It has almost certainly declined significantly since then. Only one record of a single individual during the current survey (Appendix 2) which took place during the Marri flowering season. A flock was recorded at Lake Clifton in January/February by Serventy (1930).

Polytelis anthopeplus Regent Parrot

Status uncertain, probably an uncommon breeding resident in the study area. Storr and Johnstone 1988 reviewed its historical presence on the Swan Coastal Plain and concluded that it was previously only an irregular non-breeding visitor from inland semi-arid areas. However, Johnstone and Storr (1998) considered it locally common on the Swan Coastal Plain with breeding south to Ludlow. Five records totalling 27 individuals during current survey (Appendix 2), most groups were in the vicinity of Tuarts in partly cleared farmlands along the highway.

Barnardius zonarius Australian Ringneck Parrot

Common to moderately common breeding resident, most abundant in Tuart woodlands, lake-edge woodlands, partially cleared farmlands, towns (attracted to garden shrubs) and

along major roads (where it feeds on weed seeds). Breeding in Tuarts throughout the study area. 118 records totalling 285 individuals during current survey (Appendix 2). This species has undoubtedly increased since European settlement in the study area, as it has done throughout the southwest, and has benefited from new food sources especially in farmlands. It is still the most abundant parrot in the study area as it was when Serventy (1930) recorded it as the most abundant parrot throughout the region.

Purpureicephalus spurius Red-capped Parrot

Uncommon breeding resident, in all types of woodland throughout the study area. 37 records totalling 60 individuals during current survey (Appendix 2). This species has probably decreased in the study area since European settlement, as it has done throughout the Coastal Plain, mainly from habitat destruction resulting in loss of food sources and breeding sites. Serventy (1930) recorded it as fairly numerous in the Tuarts throughout the region.

Platycercus icterotis Western Rosella

Conservation significance: Category 4 (Table 1). This species has declined significantly on the Swan Coastal Plain and Government of Western Australia (2000) listed it as a Coastal Plain significant species. Not recorded during current survey. Serventy (1930) recorded a few between the Harvey Estuary and Lake Clifton.

Neophema elegans Elegant Parrot

Status uncertain. Not recorded during current survey. Occurs in eucalypt woodlands in the Kemerton area (J. Dell unpublished) and could be expected to occur in semi-cleared farmland and woodlands in the study area.

Family Cuculidae

Cacomantis pallidus Pallid Cuckoo

Likely to be an uncommon migrant, mostly in woodlands and semi-cleared farmlands throughout the study area. Not recorded by us, however, our 2009 survey was largely

outside the time when this species is likely to be present. On the Swan Coastal Plain, Storr and Johnstone (1988) noted that most records were between June and December.

Cacomantis flabelliformis Fan-tailed Cuckoo

Likely to be an uncommon migrant mostly in woodlands, tall shrublands and semi-cleared farmlands throughout the study area. On the Swan Coastal Plain Storr and Johnstone (1988) noted that most records were between April and December. J. Dell recorded this species in Tuart woodland west of Lake Clifton in June 1998 (Alan Tingay and Associates 1998). Three records totalling three individuals during our current survey which was largely outside the time when this species is likely to be present.

Chalcites basalis Horsfield's Bronze Cuckoo

Likely to be an uncommon migrant mostly in coastal shrublands and semi-cleared woodlands throughout the study area. Not recorded by us, however, our 2009 survey was largely outside the time when this species is likely to be present. On the Swan Coastal Plain, Storr and Johnstone (1988) noted that most records were between mid-June and mid-January.

Chalcites lucidus Shining Bronze Cuckoo

Likely to be a moderately common migrant mostly in woodlands and tall shrublands throughout the study area. Our only record was of a calling individual in tall shrubland on the east side of Lake Clifton on 25 October 2006 (our 2009 survey was largely outside the time when this species is likely to be present). On the Swan Coastal Plain, Storr and Johnstone (1988) noted that most records were between late-July and early-January. Serventy (1930) recorded it between the Harvey Estuary and Lake Clifton.

Family Strigidae

Ninox novaeseelandiae Southern Boobook

Status uncertain, due to difficulty in surveying nocturnal birds. Likely to occur in most habitats in the survey area. Storr and Johnstone (1988) considered this species to be a

moderately common passage migrant and possibly also an uncommon resident on the Swan Coastal Plain. Recorded near Lake Clifton by Serventy (1930).

Ninox connivens Barking Owl

Conservation significance: P2, Category 3 (Table 1). Probably regionally extinct. See Storr and Johnstone (1988) for summary of previous Swan Coastal Plain records.

Family Tytonidae

Tyto javanica Eastern Barn Owl

Status uncertain, due to difficulty in surveying nocturnal birds. Likely to occur in semi-cleared farmlands and woodland habitats in the survey area. Storr and Johnstone (1988) considered this species to be an uncommon visitor in late-March to mid-October on the Swan Coastal Plain. Recorded near Mandurah by Serventy (1930).

Family Halcyonidae

**Dacelo novaeguineae* Laughing Kookaburra

Moderately common breeding resident throughout the study area. Occurs predominantly in partly cleared farmland with scattered trees, woodlands and edges of lakes with fringing woodlands. 37 records totalling 42 individuals in current survey (Appendix 2). Serventy (1930) recorded this species as common throughout the region between Mandurah and Bunbury only 30 years after its introduction to the Perth area.

Todiramphus sanctus Sacred Kingfisher

Uncommon breeding migrant mostly between September and March throughout the study area. Predominantly in partly cleared farmland with scattered trees, woodlands and edges of lakes with fringing woodlands. Five records of single individuals during current survey (Appendix 2). Serventy (1930) recorded it throughout the area between Mandurah and Bunbury.

Family Meropidae

Merops ornatus Rainbow Bee-eater

Conservation significance: Listed as a Migratory species under the *Environment Protection and Biodiversity Conservation Act 1999* (Table 1). Moderately common breeding migrant mostly between October and March throughout the study area. Mainly in partly cleared farmland, edges of lakes and along roads and tracks in vegetated areas. Eleven records totalling 25 individuals during current survey (Appendix 2). Utilising powerlines or trees for perching while sallying forth to feed on flying insects. Serventy (1930) recorded it all the way between Mandurah and Bunbury and breeding along the edges of Lake Clifton. This species has probably benefited from the creation of un-vegetated areas for construction of its breeding burrows.

Family Climacteridae

Climacteris rufa Rufous Treecreeper

Conservation significance: Category 3 (Table 1). Regionally extinct. Formerly occurred in Tuarts between Wanneroo and Busselton but no records in the region since 1920 (Storr and Johnstone (1988).

Family Maluridae

Malurus splendens Splendid Fairy-wren

Conservation significance: Category 3 (Table 1). Moderately common to common resident. 58 records totalling 130 individuals during current survey (Appendix 2). Generally restricted to denser vegetated areas including coastal dunes, shrublands, woodlands with relatively intact understoreys and margins of wetlands and lakes. Recorded by Serventy (1930) as plentiful throughout the region. Populations of this species in the study area are probably the most continuous on the southern Swan Coastal Plain. Elsewhere on the Swan Coastal Plain it is generally scarce or locally extinct and largely confined to denser vegetation remnants.

Stipiturus malachurus Southern Emu-wren

Conservation significance: Category 3 (Table 1). There are no confirmed records from the study area and it was not recorded by Serventy (1930). However, Whitlock (1939) in the Bunbury area considered it was restricted to shrublands on sand-dunes close to the coast. Storr and Johnstone (1988) considered it uncommon and patchily distributed in coastal dunes, near-coastal sandplains, seasonally wet clay flats, and sedges in swamps and around lakes on the southern Swan Coastal Plain. Dell (2006 unpublished) recorded it just outside the study area in samphire margins at Island Point on the west side of the Harvey Estuary and Dell and Hyder-Griffiths (2002) recorded it in densely vegetated wetlands at Muddy Lakes south of Bunbury. This easily overlooked species is likely to occur in suitable habitats in the study area.

Family Acanthizidae

Sericornis frontalis White-browed Scrubwren

Conservation significance: Category 3 (Table 1). Moderately common to common resident. 80 records totalling 126 individuals in current survey (Appendix 2). Generally restricted to denser vegetated areas including coastal dunes, shrublands, woodlands with relatively intact understoreys and margins of wetlands and lakes. Rather surprisingly this species was not recorded by Serventy (1930). Populations of this species in the study area are probably the largest and most significant on the southern Swan Coastal Plain. Elsewhere on the Swan Coastal Plain it is generally scarce or locally extinct and largely confined to denser vegetation remnants.

Smicrornis brevirostris Weebill

Conservation significance: Category 3 (Table 1). Moderately common resident. 54 records totalling 103 individuals in current survey (Appendix 2). Generally restricted to areas with eucalypts in the upper storey. Serventy (1930) noted this species in Tuarts throughout the region; however rather surprisingly Whitlock (1939) considered it only a straggler in Tuart woodlands around Bunbury. The populations of this species in the study area are probably the largest and most significant on the southern Swan Coastal

Plain. Elsewhere on the Swan Coastal Plain it is generally scarce and largely confined to vegetation remnants with eucalypts.

Gerygone fusca Western Gerygone

Moderately common to seasonally common breeding visitor in spring and summer, otherwise mainly a visitor and passage migrant with peak numbers in autumn (moving northwards) and spring (moving southwards). Highly mobile and occurring in all types of woodlands and tall shrublands. 62 records totalling 70 individuals in current survey (Appendix 2). Recorded in Tuart woodlands between Mandurah and Lake Clifton in January/February by Serventy (1930).

Acanthiza apicalis Inland Thornbill

Conservation significance: Category 3 (Table 1). Moderately common to common resident. 71 records totalling 106 individuals in current survey (Appendix 2). Generally restricted to denser vegetated areas including coastal dunes, shrublands, woodlands with relatively intact understoreys and margins of wetlands and lakes. Rather surprisingly this species was only recorded by Serventy (1930) at Lake Clifton and not in other parts of the area traversed by him. Populations of this species in the study area are probably the most continuous and significant on the southern Swan Coastal Plain. Elsewhere on the Swan Coastal Plain it is generally scarce or locally extinct and largely confined to denser vegetation remnants.

Acanthiza inornata Western Thornbill

Conservation significance: Category 3 (Table 1). Uncommon resident. Woodlands with relatively intact understoreys in the northern part of the study area. Three records totalling 14 individuals in current survey (Appendix 2). Rather surprisingly this species was not recorded by Serventy (1930). The populations of this species in the study area are probably the largest and most significant on the southern Swan Coastal Plain. Elsewhere on much of the Swan Coastal Plain it is generally scarce or mainly locally extinct as a consequence of habitat clearing (Government of Western Australia 2000).

Acanthiza chrysorrhoa Yellow-rumped Thornbill

Conservation significance: Category 3 (Table 1). Uncommon to moderately common breeding resident. All types of woodlands including partly cleared farmlands, along road verges with remnant woodlands, and in tall shrublands. 21 records totalling 66 individuals in current survey (Appendix 2). Serventy (1930) reported it as widespread in the region.

Family Pardalotidae

Pardalotus punctatus Spotted Pardalote

Scarce to moderately common seasonal visitor and passage migrant with peak numbers in autumn (moving northwards) to spring (moving southwards). Highly mobile and mainly occurring in Tuart woodlands and other habitats with eucalypts. X records in current survey (Appendix 2). Serventy (1930) recorded it throughout Tuart woodlands in January/February.

Pardalotus striatus Striated Pardalote

Moderately common to seasonally common. Status uncertain, but likely to be a breeding visitor in spring and summer, otherwise a visitor and passage migrant with peak numbers in autumn (moving northwards) and early spring (moving southwards). Highly mobile and mainly occurring in Tuart woodlands and other habitat types with eucalypts. 42 records totalling 110 individuals during current survey (Appendix 2). See Dell (1984) for movement in southwestern Australia. Recorded as common in Tuart woodlands by Serventy (1930).

Family Meliphagidae

Lichmera indistincta Brown Honeyeater

Uncommon to very common resident and seasonal blossom nomad. Occurs in most habitat types throughout the study area. Numbers peak during flowering of proteaceous

and myrtaceous plants. 29 records totalling 32 individuals during current survey (Appendix 2).

Lichenostomus virescens Singing Honeyeater

Common breeding resident, in most habitats throughout the study area but most abundant in coastal shrublands, partially cleared farmlands and town gardens, also in woodlands especially when species of *Banksia* are flowering. 35 records totalling 55 individuals during current survey (Appendix 2). This opportunistic generalist has probably increased since European settlement especially in partly cleared farmland presumably benefiting from new food sources. Serventy (1930) only noted it in the Lake Clifton area and not in other parts of the area visited by him. However, Whitlock (1939) recorded it as common in the Bunbury area.

Lichenostomus ornatus Yellow-plumed Honeyeater

Conservation significance: Category 3 (Table 1). Now probably regionally extinct. Previously likely to have been restricted to Tuart woodlands in the region. Serventy (1930) noted it in Tuart forest in the region. Whitlock (1939) noted that due to disturbance it was declining in Tuart woodlands in the Bunbury area. Storr and Johnstone (1988) considered it scarce or extinct in much of the Tuart zone between Yanchep and Wonnerup.

Melithreptus chloropsis Western White-naped Honeyeater

Conservation significance: Category 3 (Table 1). Status uncertain in region of study area. We only recorded this species once: two feeding on sap on Tuart tree in site MY4 on 29 May (Appendix 2). Serventy (1930) noted it in Tuart forest in the region, but Whitlock (1939) did not record it in the Bunbury area during the 1930's. Storr and Johnstone (1988) considered that it was formerly a common resident in Tuart forest on the Swan Coastal Plain but was now scarce or extinct in much of the Tuart zone between Yanchep and Wonnerup.

Phylidonyris novaehollandiae New Holland Honeyeater

Conservation significance: Category 4 (Table 1). Uncommon to common, resident and blossom nomad. All types of habitats especially understoreys of Tuart woodlands, dense wetland vegetation, Banksia woodlands, coastal dunal swales and town and farmland gardens. Numbers peak around proteaceous and myrtaceous plants when they are in blossom. 14 records totalling 29 individuals during current survey (Appendix 2).

Phylidonyris niger White-cheeked Honeyeater

Conservation significance: Category 4 (Table 1). Status uncertain in region of study area. Three records totalling six individuals during current survey were in the northern part of the study area (Appendix 2). Storr and Johnstone (1988) and Johnstone and Storr (2004) state that this species does not occur on the Swan Coastal Plain between Forrestdale and Cape Naturaliste. However Dell (unpublished) has recorded this species in Banksia woodlands between North Dandalup and Mandurah to the northeast of the study area; in woodlands with diverse understoreys and in *Pericalymma* heath at Kemerton to the southeast of the study area; and south of the study area at Australind, in the mangroves at Koombana Bay and gardens in Bunbury. This blossom nomad is therefore likely to occur in the study area when preferred nectar sources are in bloom.

Epthianura albifrons White-fronted Chat

Likely to be scarce to uncommon throughout the study area, mainly in partly cleared farm country and recently burnt shrublands. Not recorded in current survey (Appendix 2). Serventy (1930) noted this species in partly cleared country at Lake Clifton.

Glyciphila melanops Tawny-crowned Honeyeater

Conservation significance: Category 4 (Table 1). Status unknown, but possibly only a passage migrant, seasonal visitor or blossom nomad, mainly to coastal shrublands. Only record in current survey was a single individual in coastal shrublands at site WH2 on 30 January (Appendix 2). Not recorded by Serventy (1930), but he probably spent little time in the coastal shrublands. Storr and Jonstone (1988) did not record this species on that part of the Swan Coastal Plain between Forrestdale and the Busselton area.

Acanthorhynchus superciliosus Western Spinebill

Conservation significance: Category 4 (Table 1). Scarce to uncommon throughout the study area. Status uncertain, possibly a relatively uncommon resident as well as a more frequent blossom nomad. All types of woodlands particularly those with diverse understoreys and in shrublands when plants are flowering. Only two records of single birds during current survey (Appendix 2). Serventy (1930) noted it in Tuart woodlands.

Anthochaera lunulata Western Wattlebird

Conservation significance: Category 4 (Table 1). Status uncertain, but likely to be a scarce to uncommon blossom nomad. Mainly visiting wetlands with *Banksia littoralis* and woodlands with *B. attenuata* and *B. grandis* when the banksias are in bloom. X records in current survey (Appendix 2).

Anthochaera carunculata Red Wattlebird

Moderately common to common blossom nomad, breeding visitor, and passage migrant. Highly mobile and occurring in all types of habitat; numbers fluctuate according to flowering both within the study area and elsewhere in the south-west. 88 records totalling 139 individuals during current survey (Appendix 2). Serventy (1930) noted it as plentiful in Tuart and Banksia woodlands.

Family Eupetidae

Psophodes nigrogularis Western Whipbird

Conservation significance: P4 (Table 1). Now probably extinct in region. See Storr and Johnstone (1988) for history of decline on the Swan Coastal Plain.

Family Neosittidae

Daphoenositta chrysoptera Varied Sittella

Conservation significance: Category 3 (Table 1). Uncommon resident in woodlands throughout the study area. Three records totalling 15 individuals during current survey (Appendix 2). Serventy (1930) noted flocks in Tuart woodlands north of Lake Clifton.

Family Campephagidae

Coracina novaehollandiae Black-faced Cuckoo-shrike

Moderately common to seasonally common. Status uncertain, likely to fluctuate markedly between seasons. Probably a breeding visitor in spring; and a non-breeding winter visitor and passage migrant with peak numbers in late-autumn (moving northwards) and early spring (moving southwards). Highly mobile and occurring in all types of habitat. Seven records totalling 19 individuals during current survey (Appendix 2). During our 2003 to 2008 survey, in October 2006 of 157 km of road transects between Myalup and the northern end of the study area J. Dell and E. Harris only recorded 3 sightings totalling 7 individuals during the time that the species would have been expected to have been breeding. J. Dell recorded it in Tuart woodland and other habitats west of Lake Clifton in June 1998 (Alan Tingay and Associates 1998). Serventy (1930) noted that it was fairly common in the region in January and February.

Lalage sueurii White-winged Triller

Uncommon migrant. Likely to be seasonally present (mainly spring and summer) especially in partly cleared farmlands, lake margins and woodlands throughout the study area. Not recorded by us but our 2009 survey was largely outside the time when this species is likely to be present. Serventy (1930) recorded this species in January in partly cleared country on the east side of Lake Clifton.

Family Pachycephalidae

Pachycephala pectoralis Golden Whistler

Conservation significance: Category 3 (Table 1). Uncommon resident. Woodlands (particularly those with relatively intact understoreys) and taller shrublands throughout the study area. 32 records totalling 37 individuals during current survey (Appendix 2). Serventy (1930) noted occasional individuals throughout the study region. The populations of this species in the study area are probably the largest and most continuous on the southern Swan Coastal Plain. Elsewhere on much of the Swan Coastal Plain it is generally scarce or locally extinct and largely confined to denser vegetation remnants.

Pachycephala rufiventris Rufous Whistler

Uncommon to moderately common resident. All types of woodlands throughout the study area. 41 records totalling 52 individuals during current survey (Appendix 2). This species may have increased in areas where woodlands with dense understoreys have been converted to semi-cleared woodlands. Not recorded by Serventy (1930), however his lack of records is rather surprising as Whitlock (1939) recorded it in the Bunbury area.

Colluricincla harmonica Grey-Shrike-thrush

Conservation significance: Category 3 (Table 1). Uncommon resident. Woodlands particularly those with relatively intact understoreys and taller shrublands throughout the study area. 26 records totalling 30 individuals during current survey (Appendix 2). Serventy (1930) did not record this species in the study area. The populations of this species in the study area are probably the largest and most continuous on the southern Swan Coastal Plain. Elsewhere on much of the Swan Coastal Plain it is generally scarce or locally extinct and largely confined to denser vegetation remnants.

Family Artamidae

Artamus cinereus Black-faced Woodswallow

Conservation significance: Category 4 (Table 1). Uncommon resident. Mainly edges of woodlands (especially lake-edge woodlands), partly cleared farmlands and coastal

shrublands especially those regenerating after fire. Eight records totalling 29 individuals during current survey (Appendix 2). Serventy (1930) recorded it in semi-open country at Lake Clifton in February 1928. On much of the Swan Coastal Plain south of Yanchep it is generally scarce or mainly locally extinct as a consequence of habitat clearing (Government of Western Australia 2000).

Artamus cyanopterus Dusky Woodswallow

Conservation significance: Category 4 (Table 1). Moderately common autumn-spring visitor from further south and passage migrant northwards in autumn and southwards in spring. All types of woodlands (especially lake-edge woodlands) and partly cleared farmlands. Seven records totalling 26 individuals during current survey (Appendix 2). Whether this species is also currently resident in summer is uncertain; however, Serventy (1930) recorded it at Lake Clifton in January 1929.

Family Cracticidae

Cracticus torquatus Grey Butcherbird

Moderately common breeding resident. Most abundant in partially cleared farmlands, and woodlands throughout the study area. 42 records totalling 44 individuals during current survey (Appendix 2). This opportunistic carnivore has possibly increased since European settlement especially in partly cleared farmland presumably benefiting from new food sources. Serventy (1930) recorded it as abundant throughout the region.

Cracticus tibicen Australian Magpie

Moderately common breeding resident. Most abundant in partially cleared farmlands, towns and along the highway. 118 records totalling 273 individuals during current survey (Appendix 2). Undoubtedly increased since European settlement (as it has done throughout the southwest) benefiting from new food sources especially in farmlands. Serventy (1930) recorded it throughout the region between Mandurah and Bunbury.

Strepera versicolor Grey Currawong

Conservation significance: Category 4 (Table 1). Uncommon breeding resident. Occurs mainly in more continuous woodlands and taller shrublands. Seven records totalling eight individuals during current survey (Appendix 2). Breeding at site WH 5. Undoubtedly decreased since European settlement (as it has done throughout much of the southwest). Serventy (1930) recorded it as very numerous throughout the region.

Family Rhipiduridae

Rhipidura albiscapa Grey Fantail

Moderately common breeding resident, common winter visitor from further south and passage migrant in autumn (moving northwards) and spring (moving southwards). All types of woodland (especially lake-edge woodlands) and tall shrublands. 103 records totalling 141 individuals during current survey (Appendix 2). Its status has probably remained unchanged in vegetated areas since 1930 when Serventy recorded it throughout the study area.

Rhipidura leucophrys Willie Wagtail

Uncommon to moderately common resident, and seasonal transient. Most habitats especially partly cleared farmlands, towns, and edges of lakes and wetlands throughout the study area. 30 records totalling 33 individuals during current survey (Appendix 2). Serventy (1930) only noted this species in the area between Mandurah and Lake Clifton. This species has probably increased with the opening up of more densely vegetated areas for farmland.

Family Corvidae

Corvus coronoides Australian Raven

Moderately common breeding resident. Most abundant in lake-edge woodlands, partially cleared farmlands, towns (attracted to human scraps) and along the highway where it feeds on roadkills. 173 records totalling 294 individuals during current survey (Appendix 2). Undoubtedly increased since European settlement (as it has done throughout the

southwest) benefiting from new food sources especially in farmlands. Serventy (1930) recorded it throughout the region between Mandurah and Bunbury.

Family Monarchidae

Myiagra inquieta Restless Flycatcher

Conservation significance: Category 3 (Table 1). Probably now only an occasional winter visitor. J. Dell recorded one in Tuart woodland west of Lake Clifton in June 1998 (Alan Tingay and Associates 1998). See Storr and Johnstone (1988) for decline of this previously widespread resident species on the Swan Coastal Plain.

Grallina cyanoleuca Magpie-lark

Status uncertain, probably an uncommon resident, common seasonal visitor and passage migrant. Eight records totalling 11 individuals during current survey (Appendix 2). In the study area this species is widespread and sometimes abundant in partly cleared farmlands particularly near wetlands and in seasonally saturated paddocks; also in towns especially grassed parks, around roadhouses along the highway; and frequent along the Harvey Main Drain. See Storr and Johnstone (1988) for review of increase on Coastal Plain since colonial times.

Family Petroicidae

Petroica boodang Scarlet Robin

Conservation significance: Category 3 (Table 1). Uncommon resident. Woodlands, including semi-cleared woodland in farmland, throughout the study area. Nine records totalling 13 individuals during current survey (Appendix 2). Serventy (1930) noted occasional individuals throughout the region. The populations of this species in the study area are probably the largest and most significant on the southern Swan Coastal Plain. Elsewhere on the Swan Coastal Plain it is generally scarce or mainly locally extinct as a consequence of habitat clearing (Government of Western Australia 2000).

Eopsaltria griseogularis Western Yellow Robin

Conservation significance: Category 3 (Table 1). Uncommon resident. Woodlands throughout the study area. Six records totalling nine individuals during current survey (Appendix 2). Serventy (1930) noted this species as frequent in wooded country. The populations of this species in the study area are probably the largest and most significant on the southern Swan Coastal Plain. Elsewhere on the Swan Coastal Plain it is generally scarce or mainly locally extinct as a consequence of habitat clearing (Government of Western Australia 2000).

Family Acrocephalidae

Acrocephalus australis Australian Reed-Warbler

Uncommon resident. Likely to be present in suitable habitat (i.e. *Typha* and other reed-bed margins of freshwater swamps and man-made or natural waterbodies) anywhere in the study area. Not recorded during current survey but suitable habitats were poorly examined. Serventy (1930) recorded this species in a freshwater swamp between Lake Clifton and the Leschenault Inlet.

Family Megaluridae

Cincloramphus mathewsi Rufous Songlark

Uncommon migrant. Likely to be seasonally present (mainly spring and summer) in partly cleared farmlands throughout the study area. Not recorded during current survey which was largely outside the time when this species is likely to be present. Storr and Johnstone (1988) recorded this species south to Bunbury on the Swan Coastal Plain.

Cincloramphus cruralis Brown Songlark

Uncommon migrant. Likely to be seasonally present (mainly spring and summer) in farmlands throughout the study area. Not recorded during current survey which was largely outside the time when this species is likely to be present. Storr and Johnstone (1988) recorded this species throughout the Swan Coastal Plain with a presumed breeding record in the Busselton area.

Megalurus gramineus Little Grassbird

Uncommon resident. Likely to be present in suitable habitat (i.e. *Gahnia* and other sedge or reed-bed margins of swamps and lakes) anywhere in the study area. One record of two individuals during current study in sedgelands on eastern side of Lake Clifton; but suitable habitats were poorly examined.

Family Timaliidae

Zosterops lateralis Silvereye

Possible resident and common transient (particularly in the post-breeding season in summer and autumn) in most habitats throughout study area. Frequently visiting town and farm gardens and feeding on many types of fruits and berries. Feeding on berries of *Rhagodia baccata* in coastal dunes. 90 records totalling 332 individuals during current survey (Appendix 2). Serventy (1930) reported it widespread and commented on damage to cultivated fruit crops.

Family Hirundinidae

Hirundo neoxena Welcome Swallow

Moderately common to common throughout the study area. An aerial insectivore most frequent over partially cleared farmlands, lakes and other water bodies, coastal dunes, and associated with towns and other man-made structures including farm buildings and bridges. 32 records totalling 165 individuals during current survey (Appendix 2). Nesting on buildings along the highway in October. Groups of up to 30 aggregate to roost in buildings in April/May, e.g. near beach in Myalup.

Petrochelidon nigricans Tree Martin

Seasonally moderately common to common or scarce throughout the study area. An aerial insectivore most frequent over woodlands, partially cleared farmlands, and lakes, less frequent over coastal dunes. 30 records totalling 102 individuals during current

survey (Appendix 2). Serventy (1930) noted this species as widely distributed in the region.

Family Nectariniidae

Dicaeum hirundinaceum Mistletoebird

Uncommon nomad. Two records of single birds during current survey (Appendix 2). J. Dell recorded this species in Tuarts west of Lake Clifton in June 1998. Serventy (1930) recorded it in mistletoe-infested Tuarts north of the study area and commented that mistletoe was common on Tuarts in the region. This situation still prevails with the obligate Mistletoebird dispersed Stalked Mistletoe (*Amyema miquelii*) being abundant on Tuarts, especially west of Lakes Clifton and Preston.

Family Motacillidae

Anthus novaeseelandiae Australasian Pipit

Moderately common in grassy farmlands and horticultural crops; uncommon on edges of lakes, in recently burnt shrublands and in more open parts of coastal dunes. Three records totalling three individuals during current survey (Appendix 2). Undoubtedly increased as a consequence of conversion of native vegetation to farmland. Serventy (1930) recorded this species in cleared areas on the edge of Lake Clifton.

DISCUSSION

Data presented in this report indicate that the Dawesville to Binningup study area has a rich and diverse bird fauna comprising at least 174 species which includes 124 species of non-passerines in 31 families, and 50 species of passerines in 21 families. Among the non-passerines the most species-rich families are those associated with wetland habitats, the 11 species of ducks, 7 species of herons and egrets, 7 species of crakes and rails, 10 species of plovers and dotterels, and 17 species of sandpipers. Other rich non-passerine families are the eagles, kites and hawks with 11 species and the parrots and cockatoos with 6 species. Among the passerines the most species-rich family is the honeyeaters with

11 species. Small insectivorous families are well-represented with several species of fairy-wrens, thornbills and whistlers. The richness of the avifauna of the study area is exemplified by the fact that the total of 174 species comprises more than half of the 311 species known from the entire Swan Coastal Plain between the Moore River and Dunsborough (Storr and Johnstone 1988).

A high proportion (102 species or 58%) of the 174 bird species known from the study area are regionally conservation significant. These species and their categories of conservation significance are listed in Table 1.

TABLE 1: Conservation significant birds known from or likely to occur in the Dawesville-Binningup study area

KEY:

Conservation Significance

- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (DEH 2005)

‡ = Endangered

/U = Vulnerable

[= Internationally Protected Migratory Species

- JAMBA/CAMBA/ROKAMBA agreements

- *Wildlife Conservation (Specially Protected Fauna) Notice 2008* (Government of Western Australia 2008)

S1 = Schedule 1 — being fauna that is rare or likely to become extinct

S4 = Schedule 4 — being fauna that is in need of special protection

- DEC Priority Fauna List (DEC 2009)

- Regionally declining species (based on Government of Western Australia 2000 including additional species from the current study area)

Category 3 = species with a reduced distribution on the Swan Coastal Plain and the Dawesville/Binningup study area

Category 4 = species with reduced populations on the Swan Coastal Plain and the Dawesville/Binningup study area

Scientific Name	Common Name	Conservation Significance
Order CASUARIIFORMES		
Family CASUARIIDAE		
<i>Dromaius novaehollandiae</i>	Emu	Category 4
Order ANSERIFORMES		
Family ANATIDAE		
<i>Stictonetta naevosa</i>	Freckled Duck	Category 3
<i>Oxyura australis</i>	Blue-billed Duck	Category 3
<i>Biziura lobata</i>	Musk Duck	Category 3
<i>Anas rhynchotis</i>	Australasian Shoveler	Category 3
<i>Aythya australis</i>	Hardhead	Category 3
Order COLUMBIFORMES		
Family COLUMBIDAE		
<i>Phaps chalcoptera</i>	Common Bronzewing	Category 3
<i>Phaps elegans</i>	Brush Bronzewing	Category 3
Order CAPRIMULGIFORMES		
Family PODARGIDAE		
<i>Podargus strigoides</i>	Tawny Frogmouth	Category 4
Order APODIFORMES		
Family AEGOTHELIDAE		
<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	Category 4
Family APODIDAE		
<i>Apus pacificus</i>	Fork-tailed Swift	CAMBA/ROKAMBA
Order CICONIIFORMES		
Family ARDEIDAE		
<i>Nycticorax caledonicus</i>	Nankeen Night Heron	Category 4
<i>Ixobrychus dubius</i>	Australian Little Bittern	P4, Category 4
<i>Ixobrychus flavicollis</i>	Black Bittern	P2, Category 4
<i>Botaurus poiciloptilus</i>	Australasian Bittern	VU, S1, Category 4
<i>Ardea ibis</i>	Cattle Egret	JAMBA/CAMBA
<i>Ardea modesta</i>	Eastern Great Egret	JAMBA/CAMBA
<i>Egretta garzetta</i>	Little Egret	
<i>Egretta sacra</i>	Eastern Reef Egret	CAMBA
Order FALCONIFORMES		
Family ACCIPITRIDAE		
<i>Pandion cristatus</i>	Eastern Osprey	Category 3
<i>Lophoictinia isura</i>	Square-tailed Kite	Category 4
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Category 3, CAMBA
<i>Haliastur sphenurus</i>	Whistling Kite	Category 4
<i>Accipiter fasciatus</i>	Brown Goshawk	Category 4

Scientific Name	Common Name	Conservation Significance
<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk	Category 4
<i>Hieraaetus morphnoides</i>	Little Eagle	Category 4
<i>Aquila audax</i>	Wedge-tailed Eagle	Category 4
<i>Circus approximans</i>	Swamp Harrier	Category 3
Family FALCONIDAE		
<i>Falco berigora</i>	Brown Falcon	Category 4
<i>Falco peregrinus</i>	Peregrine Falcon	S4, Category 4
Order GRUIFORMES		
Family RALLIDAE		
<i>Gallinula tenebrosa</i>	Dusky Moorhen	Category 3
Family OTIDIDAE		
<i>Ardeotis australis</i>	Australian Bustard	Category 4
Order CHARADRIIFORMES		
Family SCOLOPACIDAE		
<i>Limosa limosa</i>	Black-tailed Godwit	JAMBA/CAMBA/ROKAMBA
<i>Limosa lapponica</i>	Bar-tailed Godwit	JAMBA/CAMBA/ROKAMBA
<i>Numenius minutus</i>	Little Curlew	JAMBA/CAMBA/ROKAMBA
<i>Numenius phaeopus</i>	Whimbrel	JAMBA/CAMBA/ROKAMBA
<i>Numenius madagascariensis</i>	Eastern Curlew	JAMBA/CAMBA/ROKAMBA, P4
<i>Tringa stagnatilis</i>	Marsh Sandpiper	JAMBA/CAMBA/ROKAMBA
<i>Xenus cinereus</i>	Terek Sandpiper	JAMBA/CAMBA/ROKAMBA
<i>Tringa nebularia</i>	Common Greenshank	JAMBA/CAMBA/ROKAMBA
<i>Tringa glareola</i>	Wood Sandpiper	JAMBA/CAMBA/ROKAMBA
<i>Actitis hypoleucos</i>	Common Sandpiper	JAMBA/CAMBA/ROKAMBA
<i>Tringa brevipes</i>	Grey-tailed Tattler	JAMBA/CAMBA/ROKAMBA
<i>Arenaria interpres</i>	Ruddy Turnstone	JAMBA/CAMBA/ROKAMBA
<i>Calidris canutus</i>	Red Knot	JAMBA/CAMBA/ROKAMBA
<i>Calidris tenuirostris</i>	Great Knot	JAMBA/CAMBA/ROKAMBA
<i>Calidris alba</i>	Sanderling	JAMBA/CAMBA/ROKAMBA
<i>Calidris ruficollis</i>	Red-necked Stint	JAMBA/CAMBA/ROKAMBA
<i>Calidris minuta</i>	Little Stint	JAMBA/CAMBA/ROKAMBA
<i>Calidris subminuta</i>	Long-toed Stint	JAMBA/CAMBA/ROKAMBA
<i>Calidris melanotos</i>	Pectoral Sandpiper	JAMBA/CAMBA/ROKAMBA
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	JAMBA/CAMBA/ROKAMBA
<i>Calidris ferruginea</i>	Curlew Sandpiper	JAMBA/CAMBA/ROKAMBA
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	JAMBA/CAMBA/ROKAMBA
<i>Philomachus pugnax</i>	Ruff	JAMBA/CAMBA/ROKAMBA
Family TURNICIDAE		
<i>Turnix varius</i>	Painted Button-quail	Category 4
Family BURHINIDAE		
<i>Burhinus grallarius</i>	Bush Stone-curlew	P4
Family CHARADRIIDAE		
<i>Pluvialis fulva</i>	Pacific Golden Plover	JAMBA/CAMBA/ROKAMBA
<i>Pluvialis squatarola</i>	Grey Plover	JAMBA/CAMBA/ROKAMBA

Scientific Name	Common Name	Conservation Significance
<i>Charadrius dubius</i>	Little Ringed Plover?	JAMBA/CAMBA/ROKAMBA
<i>Charadrius mongolus</i>	Lesser Sand Plover	JAMBA/CAMBA/ROKAMBA
<i>Charadrius leschenaultii</i>	Greater Sand Plover	JAMBA/CAMBA/ROKAMBA
<i>Charadrius veredus</i>	Oriental Plover	JAMBA/CAMBA/ROKAMBA
<i>Thinornis rubricollis</i>	Hooded Plover	P4
<i>Erythronyx cinctus</i>	Red-kneed Dotterel	JAMBA/CAMBA
Family ROSTRATULIDAE		
<i>Rostratula australis</i>	Australian Painted Snipe	S1, Category 4
Family LARIDAE		
<i>Onychoprion anaethetus</i>	Bridled Tern	JAMBA
<i>Hydroprogne caspia</i>	Caspian Tern	CAMBA
<i>Thalasseus bergii</i>	Crested Tern	JAMBA
Order PSITTACIFORMES		
Family CACATUIDAE		
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo	VU, S1,
<i>Calyptorhynchus latirostris</i>	Carnaby's Black-Cockatoo	E, S1, Category 4
<i>Calyptorhynchus baudinii</i>	Baudin's Black-Cockatoo	VU, S1, Category 4
Family PSITTACIDAE		
<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet	Category 4
<i>Platycercus icterotis</i>	Western Rosella	Category 4
Order STRIGIFORMES		
Family STRIGIDAE		
<i>Ninox connivens connivens</i>	Barking Owl (south-west population)	P2, (regionally extinct)
Family TYTONIDAE		
<i>Tyto novaehollandiae</i>	Masked Owl	P3, Category 4
Order CORACIFORMES		
Family MEROPIDAE		
<i>Merops ornatus</i>	Rainbow Bee-eater	Listed as Migratory under the EPBC Act 1999
Order PASSERIFORMES		
Family CLIMACTERIDAE		
<i>Climacteris rufa</i>	Rufous Treecreeper	Category 3, (regionally extinct)
Family MALURIDAE		
<i>Malurus splendens</i>	Splendid Fairy-wren	Category 3
<i>Stipiturus malachurus</i>	Southern Emu-wren	Category 3
Family ACANTHIZIDAE		
<i>Sericornis frontalis</i>	White-browed Scrubwren	Category 3
<i>Smicrornis brevirostris</i>	Weebill	Category 3
<i>Acanthiza apicalis</i>	Inland Thornbill	Category 3
<i>Acanthiza inornata</i>	Western Thornbill	Category 3
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	Category 3
Family MELIPHAGIDAE		
<i>Melithreptus chloropsis</i>	Western White-naped Honeyeater	Category 4
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	Category 4
<i>Phylidonyris niger</i>	White-cheeked Honeyeater	Category 4

Scientific Name	Common Name	Conservation Significance
<i>Glyciphila melanops</i>	Tawny-crowned Honeyeater	Category 4
<i>Acanthorhynchus superciliosus</i>	Western Spinebill	Category 4
<i>Lichenostomus ornatus</i>	Yellow-plumed Honeyeater	Category 3
<i>Anthochaera lunulata</i>	Western Wattlebird	Category 4
Family PETROICIDAE		
<i>Petroica boodang</i>	Scarlet Robin	Category 3
<i>Eopsaltria griseogularis</i>	Western Yellow Robin	Category 3
Family EUPETIDAE		
<i>Psophodes nigrogularis</i>	Western Whipbird	P4, (regionally extinct)
Family NEOSITTIDAE		
<i>Daphoenositta chrysoptera</i>	Varied Sittella	Category 3
Family PACHYCEPHALIDAE		
<i>Pachycephala pectoralis</i>	Golden Whistler	Category 3
<i>Colluricincla harmonica</i>	Grey Shrike-thrush	Category 3
Family MONARCHIDAE		
<i>Myiagra inquieta</i>	Restless Flycatcher	Category 3
Family ARTAMIDAE		
<i>Artamus cinereus</i>	Black-faced Woodswallow	Category 4
<i>Artamus cyanopterus</i>	Dusky Woodswallow	Category 4
Family CRACTICIDAE		
<i>Strepera versicolor</i>	Grey Currawong	Category 4

As identified in Government of Western Australia (2000), a number of bird species have become extinct on the Swan Coastal Plain. Of those species listed as of conservation significance in Table 1, at least three non-passerine species, the Australian Bustard, Bush Stone-curlew and Barking Owl, and possibly the Australian Owlet-nightjar are extinct in the study area. At least four passerine species, the Rufous Treecreeper, Western Whipbird, Yellow-plumed Honeyeater and Crested Shrike-tit, are also extinct in the study area.

SIGNIFICANCE OF STUDY AREA FOR BIRDS

The study area is Internationally significant for wetland and shore birds. The Peel Inlet and Harvey Estuary, saltlakes (Lake Clifton and Lake Preston) and associated wetlands are part of the Peel-Yalgorup System, which was included on the List of Wetlands of International Importance in 1990 (Ramsar 1990) and are one of the largest and most diverse estuarine/wetland complexes in Western Australia (CALM 2005). These areas are

internationally important as a habitat and refuge site for waterbird species protected by JAMBA, CAMBA and ROKAMBA agreements and are included in *The Partnership for the Conservation of Migratory Waterbirds and the Sustainable Use of their Habitats in the East Asian – Australasian Flyway* (Flyway Partnership), launched in Bogor, Indonesia on 6 November 2006. The Flyway Partnership endeavours to conserve migratory waterbirds and their habitats in the flyway.

Wetlands of the Peel-Yalgorup Ramsar site meet six criteria for listing as wetlands of international significance. Their ecological characteristics and importance for waterbirds was detailed by Hale and Butcher (2005) who listed 101 species of wetland dependent species of birds that had been recorded in the Ramsar site making this the most regionally significant wetland site for birds in Western Australia.

Additional to its significance for wetland and shore birds, the extensive and fragmented natural vegetation in the study area is of National and State significance for bushland birds. Table 1 includes four Nationally and State listed species, three DEC Priority listed species, and 45 regionally conservation significant species listed by Government of Western Australia (2000) as species with a reduced distributions or reduced populations on the Swan Coastal Plain.

A review of the status of birds on the Swan Coastal Plain (Government of Western Australia 2000) showed that about 40 per cent of the non-passerine species had decreased in number since European settlement. Nearly half of the 71 naturally occurring passerine bird species had also decreased in abundance, with nearly all of the insectivorous and nectarivorous species having declined as a direct result of clearing and consequent fragmentation of habitat.

Fifty-eight of the declining species, comprising 34 non-passerine and 24 passerine species, are known from the study area. In a regional context this makes the study area particularly significant for the conservation of these declining species on the Swan Coastal Plain. The presence of such a rich and diverse assemblage of regionally

significant bushland bird species in the study area has not been documented anywhere else on the Swan Coastal Plain. Accordingly, the more extensive and diverse tracts of habitats in the Dawesville to Binningup study area have great conservation significance for bird conservation on the Swan Coastal Plain. Even in those parts of the study area where the native vegetation is fragmented by farmland, movement of birds between larger habitat areas may be facilitated by the use of ecological linkages connecting smaller areas of remnant vegetation to larger habitat areas.

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APPENDIX 1

HABITAT DESCRIPTIONS AND GPS READINGS

GPS readings are presented in degrees and decimal minutes using Datum WGS 84

WHITE HILL [WH] ROAD - NORTHERN SITES

WH1 32 41.399S 115 36.665E

Stratum 1 1.5-2 m 30-70% *Spyridium globulosum*, *Olearia axillaris* and *Acacia rostellifera*.

Stratum 2 <0.5 m 2-10% *Lomandra* sp. and at least 5 other species.

Leaf litter sparse clumped to 2 cm deep under shrubs. Narrow leaves. No evidence of fire.

Note: part of site in more wind-swept aspect has lower vegetation cover.

WH2 32 41.353S 115 37.004E

Stratum 1 1.5-2 m 70-100% Mixed shrubland with *Acacia rostellifera*, *Olearia axillaris*, *Spyridium globulosum* and *Melaleuca ?acerosa* dominants.

Stratum 2 <0.5 m 30-70% *Lomandra* sp. and at least 5 other species.

Leaf litter sparse, clumped to 5 cm deep under shrubs. Narrow leaves. No evidence of fire.

WH3 32 41.361S 115 37.299E

Stratum 1 8-10 m 2-10% *Eucalyptus gomphocephala*.

Stratum 2 6-8 m 10-30% *Agonis flexuosa* and occasional *Banksia attenuata* and *Dryandra sessilis*.

Stratum 3 1.5-2 m 10-30% *Xanthorrhoea preissii*, and *Spyridium globulosum*.

Stratum 4 <1 m ca 12% *Hibbertia hypericoides* and *Hakea lissocarpha*.

Leaf litter continuous 2-5 cm deep, clumped deeper under shrubs. Broad leaves and a few logs, numerous dead *Xanthorrhoea*. Last burnt: greater than 10 years.

WH4 32 41.419S 115 38.237E

Stratum 1 8-12 m ca. 2% *Eucalyptus gomphocephala* and *Eucalyptus marginata*.

Stratum 2 5-8 m 10-30% *Banksia attenuata*.

Stratum 3 1-1.5 m 30-70% *Melaleuca* sp., *Hibbertia hypericoides*, and occasional *Hakea lissocarpha* and *Olearia axillaris*.

Leaf litter continuous < 2 cm deep, clumped deeper under shrubs. Broad leaves and some logs. Last burnt: greater than 10 years.

WH5 32 41.301S 115 38.871E

Stratum 1 5-8 m 30-70% *Banksia attenuata*, *Allocasuarina fraseriana*, *Zylomelum occidentalis*, *Agonis flexuosa* and *Eucalyptus marginata* with occasional *E. gomphocephala* and *Corymbia calophylla* emergent to 12 m.

Stratum 2 <1 m 10-30% *Hibbertia hypericoides*, *Stirlingia* sp., *Macrozamia riedlei*, *Hakea lissocarpha*. Several other species.

Leaf litter almost continuous 2-4 cm deep, clumped deeper under shrubs. Broad and narrow leaves and some logs. Old logging signs. Last burnt: greater than 4 years.

MYALUP [MY] AREA - SOUTHERN SITES

MY2 33 05.938S 115 41.635E

Stratum 1 5-8 m 10-30% *Agonis flexuosa*. *Eucalyptus gomphocephala* emergent to 12 m.

Stratum 2 2-3 m 10-30% *Spyridium globulosum* and occasional *Hakea prostrata*.

Stratum 3 <0.5 m 2-10% *Acanthocarpus preissii*, *Lomandra* sp. and at least 6 other species.

Leaf litter continuous 3-5 cm deep, clumped to 12cm under shrubs. Broad and narrow leaves. Small logs and dead twigs abundant. No recent evidence of fire.

Note: Parts of site are more open and *Lomandra* is more abundant and *Acanthocarpus* less abundant.

MY3 33 06.340S 115 41.818E

Stratum 1 15-20 m 10-30% *Eucalyptus gomphocephala* some mature with large hollows, others immature.

Stratum 2 5-8 m 2-10% *Agonis flexuosa*.

Stratum 3 2-4m 30-70% *Spyridium globulosum* and occasional *Acacia saligna* and *A. cyclops* and *Hardenbergia comptoniana*.

Stratum 4 <0.5 m 70-100% *Acanthocarpus preissii*, *Lomandra* sp. and a few other species. Abundant dead grass.

Leaf litter almost continuous 2-5 cm deep, clumped to 12 cm under shrubs. Broad and terete leaves. Large logs and dead twigs abundant. No recent evidence of fire.

Note: Parts of site are more open and dead grass is more dense.

MY4 33 06.973S 115 42.632E

Stratum 1 10-15 m 2-10% *Eucalyptus gomphocephala*, *E. marginata*, *Corymbia calophylla*.

Stratum 2 4-10 m 30-70% *Banksia attenuata*, *Agonis flexuosa*, *B. grandis*.

Stratum 3 <1m 30-70% *Hibbertia hypericoides*, *Xanthorrhoea preissii*, *Desmocladius* sp. and other mixed species.

Leaf litter continuous 2-5 cm deep, clumped to 10 cm under shrubs. Broad leaves. Logs and dead twigs abundant. No recent evidence of fire.

MY5 33 07.584S 115 43.016E

Stratum 1 10-15 m 2-10% *Corymbia calophylla*, *Eucalyptus marginata*.

Stratum 2 6-8 m 30-70% *Banksia attenuata*, *B. grandis*, *Agonis flexuosa*, *Eucalyptus marginata*, *Corymbia calophylla*, and occasional *Banksia ilicifolia*.

Stratum 3 <1m 10-30% *Hibbertia hypericoides* and other mixed species.

Leaf litter continuous 3-5 cm deep, clumped to 12 cm under shrubs. Broad leaves. Logs and dead twigs abundant. No recent evidence of fire.

WETLAND [W]

W1 33 06.861S 115 42.169E

Outer Zone

Stratum 1 15-20 m 2-10% *Eucalyptus gomphocephala*.

Stratum 2 8-12 m 70-100% *Agonis flexuosa*.

Stratum 3 1-1.5 m 70-100% *Lepidosperma longitudinale*.

Leaf litter continuous 5-10 cm deep. Broad leaves. Large to medium logs abundant. No recent evidence of fire.

Inner Zone

Stratum 1 5-10 m 70-100% *Melaleuca raphiophylla*.

Stratum 2 1-1.5 m 30-70% *Lepidosperma longitudinale*, *Restio* sp.

Leaf litter continuous 3-5 cm deep. Narrow leaves. Large to medium logs abundant. No recent evidence of fire.

Note: Parts of site with deeper seasonal water are more open and sedges are less abundant.

MIXED WOODLAND [MW]

MW1 32 53.256S 115 41.112E

Stratum 1 8-12 m 2-10% *Eucalyptus marginata* and occasional *Corymbia calophylla* and *Eucalyptus gomphocephala*.

Stratum 2 5-7 m 30-70% *Banksia attenuata* and occasional *Agonis flexuosa*.

Stratum 3 <1m 30-70% *Hibbertia hypericoides* and other mixed species.

Leaf litter sparse, few logs. Recent evidence of fire.

LIMESTONE SHRUBLAND [LS]

LS1 32 50.07S 115 39.12E

Stratum 1 1.5-2 m 70-100% Mixed shrubland with *Acacia rostellifera*, *Olearia axillaris*, *Spyridium globulosum* and *Melaleuca ?acerosa* dominants.

Stratum 2 <0.5 m 30-70% *Lomandra* sp. and at least 5 other species.

Leaf litter sparse, clumped to 5 cm deep under shrubs. Narrow leaves. No evidence of fire.

TUART WOODLAND

TW1 transect from TW1 to 33 05.938S 115 41.635E

Continuous Tuart woodlands with structural and floristic composition varying between sites MY 2 and MY3 with fringing lake ecotones of primarily *Melaleuca raphiophylla* over dense *Lepidosperma* sedges.

TW2 32 42.25S 115 38.38E

Stratum 1 15-20 m 10-30% *Eucalyptus gomphocephala* some mature with large hollows, others immature.

Stratum 2 5-8 m 2-10% *Agonis flexuosa*.

Understorey largely removed by grazing. Annual weeds and grasses abundant. Large logs and dead twigs abundant. No recent evidence of fire.

APPENDIX 2

TABLE SHOWING BIRDS RECORDED FROM THE DAWESVILLE-BINNINGUP STUDY AREA DURING THE CURRENT SURVEY.

See Annotated List for complete list of birds known from or possibly occurring in the study area. Dates are listed in methods, shown on Figures 2 to 3 and described in Appendix 1.

Columns:

Sites:

WH1-5 = Whitehill Road sites, MY2- 5 = Mylaup sites, W1 = wetland site near Myalup, TW1 = Tuart woodland transect along Lake Preston Road, TW2 = Tuart woodland south end of Quail Road, MW1 = mixed woodland on Preston Beach Road, LS1 = limestone shrublands north of Lake Preston, BGC = Binningup Golf Course, TTH = Tim's Thicket Road.

Habitats:

TW = Tuart woodlands, MW = mixed woodlands, BW = Banksia woodlands, DS = dune shrublands, W = wetlands, F = farmlands with remnant vegetation, O = towns, beach and plantations.

2003-08 = data collected opportunistically largely from road transects and various site visits between 2003 and 2008.

The first number in each column indicates the total number of individuals recorded, the second number indicates the number of observations.

SITE CODES		WH1	WH2	WH3	WH4	WH5	MY2	MY3	MY4	MY5	W1	TW1	TW2	MW1	LS1	BGC	TTH	TW	MW	BW	DS	W	F	O	2003-08
TAXON	NO OF VISITS	6	6	6	5	5	5	4	5	5	4	6	2	2	2	3	2								
Casuariidae																									
Dromaius novaehollandiae	1 [1]												1 [1]	1 [1]	1 [1]								2 [2]		42 [10]
Anatidae																									
Anas gracilis								81 [2]																	95 [2]
Anas superciliosa								36 [2]								1 [1]	1 [1]					16 [2]			9 [4]
Biziura lobata																									2 [1]
Chenonetta jubata																						3 [1]			
Cygnus atratus																						2 [2]			18 [3]
Tadorna tadornoides												4 [2]						1 [1]				7 [4]	20 [1]		151 [7]
Podicipedidae																									
Polioccephalus poliocephalus								1 [1]																	
Tachybaptus novaehollandiae																									2 [1]
Columbidae																									
Ocyphaps lophotes				1 [1]																			4 [2]		
Phaps chalcoptera				1 [1]		1 [1]					1 [1]	5 [2]				2 [2]	2 [2]					2 [1]		3 [2]	10 [7]
Streptopelia senegalensis																					1 [1]				1 [1]
Podargidae																									
Podargus strigoides									1 [1]	1 [1]															
Anhingidae																									
Anhinga novaehollandiae																									1 [1]
Phalacrocoracidae																									
Microcarbo melanoleucos								1 [1]									2 [1]								
Phalacrocorax varius																								2 [1]	4 [1]
Pelecanidae																									
Pelecanus conspicillatus																						1 [1]			2 [1]
Ardeidae																									
Ardea modesta																						1 [1]			
Egretta novaehollandiae												2 [1]										26 [3]			12 [4]
Threskiornithidae																									
Threskiornis molucca																									16 [2]
Threskiornis spinicollis																	1 [1]								11 [1]
Accipitridae																									
Accipiter cirrocephalus				1 [1]						1 [1]							1 [1]								1 [1]
Accipiter fasciatus																									3 [2]
Aquila audax								3 [1]	1 [1]	1 [1]		1 [1]			1 [1]			1 [1]							2 [1]
Hieraaetus morphnoides						1 [1]												1 [1]					4 [2]		
Elanus caeruleus																		1 [1]					1 [1]		1 [1]
Haliaeetus leucogaster																									1 [1]
Haliastur sphenurus				1 [1]				2 [1]				2 [2]						1 [1]					1 [1]		1 [1]
Lophoictinia isura												1 [1]													
Pandion cristatus																						4 [4]			5 [4]
Falconidae																									
Falco berigora																									1 [1]
Falco cenchroides																	1 [1]					1 [1]		1 [1]	10 [8]
Falco longipennis																					1 [1]				
Falco peregrinus																									1 [1]
Rallidae																									
Fulica atra																2 [1]									2 [1]
Gallinula tenebrosa																						7 [1]			
Porphyrio porphyrio																						1 [1]			

SITE CODES	WH1	WH2	WH3	WH4	WH5	MY2	MY3	MY4	MY5	W1	TW1	TW2	MW1	LS1	BGC	TTH	TW	MW	BW	DS	W	F	O	2003-08
TAXON	NO OF VISITS	6	6	6	5	5	5	4	5	5	4	6	2	2	2	3	2							
Porzana sp.																					1 [1]			
Charadriidae																								
Charadrius rubricollis																								2 [1]
Turnicidae																								
Turnix varia								3 [2]													1 [1]			
Laridae																								
Chroicocephalus novaehollandiae																							13[5]	6 [2]
Sterna caspia																							4 [2]	
Cacatuidae																								
Cacatua roseicapilla		2 [1]	1 [1]		2 [1]		4 [3]				1 [1]						8 [3]	4 [1]				20 [3]	4 [3]	38 [13]
Calyptorhynchus banksii									5 [1]		3 [1]		2 [1]			1 [1]							8 [1]	4 [2]
Calyptorhynchus baudinii																	3 [1]							33 [2]
Calyptorhynchus latirostris					3 [1]			13 [2]								30 [1]	288 [7]						1 [1]	24 [3]
Psittacidae																								
Glossopsitta porphyrocephala								1 [1]																
Purpureicephalus spurius			6 [2]		4 [3]			6 [4]	8 [3]		2 [1]		1 [1]	1 [1]	3 [2]	1 [1]	9 [4]	6 [4]	15 [1]			3 [2]		9 [8]
Barnardius zonarius			7 [1]		5 [3]	13 [3]	10 [3]	7 [3]	12 [4]	10 [5]	50 [15]	7 [2]	4 [1]	2 [2]	10 [3]	1 [1]	13 [10]	19[10]	15 [1]	6 [2]	4 [1]	32 [11]		72 [37]
Psittacidae																								
Polytelis anthopeplus																	7 [2]							20 [3]
Cuculidae																								
Cacomantis flabelliformis															1 [1]									2 [2]
Chalcites lucidus																								1 [1]
Halcyonidae																								
Dacelo novaeguineae							2 [1]	1 [1]		1 [1]	2 [2]	1 [1]	1 [1]	1 [1]	2 [2]		10 [10]		15 [1]		1 [1]	7 [4]		12 [11]
Todiramphus sanctus											1 [1]													4 [4]
Meropidae																								
Merops ornatus			10 [1]																					15 [10]
Maluridae																								
Malurus splendens		5 [2]		6 [1]		8 [2]	5 [2]	5 [2]		8 [1]	31 [8]				1 [1]	1 [1]	12 [4]	1 [1]		11 [4]	4 [2]		4 [2]	28 [24]
Acanthizidae																								
Acanthiza apicalis			6 [4]	6 [3]	5 [3]	10 [5]	2 [2]	4 [2]	2 [1]	10 [4]	19 [11]	1 [1]	1 [1]	2 [1]		1 [1]	2 [2]	3 [2]	7 [4]		2 [2]		2 [2]	21 [19]
Acanthiza chrysorrhoa				3 [1]	4 [2]	5 [1]		6 [2]					3 [1]		1 [1]			2 [1]	5 [2]		10 [2]	5 [2]	14[1]	8 [5]
Acanthiza inornata					9 [2]														5 [1]					
Gerygone fusca			6 [5]	1 [1]	1 [1]	7 [4]	3 [3]	6 [5]	3 [3]	5 [3]	4 [4]			1 [1]	3 [3]		1 [1]	2 [2]	15 [1]					26 [25]
Sericornis frontalis	12[6]	8 [4]	5 [3]	4 [3]	1 [1]	7 [3]	5 [3]	1 [1]		14 [2]	18 [12]			1 [1]	1 [1]	1 [1]	2 [2]	7 [4]	3 [2]	10 [7]	2 [2]			24 [19]
Smicrornis brevirostris			5 [3]	12 [3]	8 [3]	4 [2]	6 [3]	13 [5]	4 [1]	5 [1]	13 [6]	2 [2]	1 [1]	1 [1]	5 [3]		9 [5]	2 [2]	15 [1]	1 [1]	1 [1]			10 [10]
Pardalotidae																								
Pardalotus striatus			22 [3]		1 [1]	7 [2]		23 [3]	4 [1]	7 [1]	5 [2]			1 [1]	1 [1]				135[1]			3 [2]		23 [23]
Meliphagidae																								
Acanthorhynchus superciliosus													2 [2]											
Anthochaera carunculata			1 [1]	4 [1]	8 [3]	6 [3]	8 [4]	1 [1]	2 [1]		8 [5]	6 [1]	1 [1]	1 [1]	2 [2]	1 [1]	11 [10]	21[13]	2 [2]		3 [1]	19 [12]	1 [1]	33 [24]
Lichenostomus virescens	13[5]	4 [3]	1 [1]			2 [2]				1 [1]	1 [1]	1 [1]						1 [1]	15 [1]	21[10]		1 [1]	3 [3]	5 [5]
Lichmera indistincta			1 [1]						2 [1]								1 [1]	1 [1]					1 [1]	26 [24]
Melithreptus chloropsis								2 [1]																
Gliciphila melanops		1 [1]																						
Phylidonyris niger									1 [1]										5 [2]					
Phylidonyris novaehollandiae							1 [1]												15 [1]	10 [2]	1 [1]	1 [1]	13[6]	2 [2]
Neosittidae																								
Daphoenositta chrysoptera							5 [1]			5 [1]								5 [1]						

SITE CODES	WH1	WH2	WH3	WH4	WH5	MY2	MY3	MY4	MY5	W1	TW1	TW2	MW1	LS1	BGC	TTH	TW	MW	BW	DS	W	F	O	2003-08
TAXON	NO OF VISITS	6	6	6	5	5	5	4	5	5	4	6	2	2	2	3	2							
Campephagidae																								
Coracina novaehollandiae				2 [1]					1 [1]	3 [1]					2 [1]	1 [1]	3 [2]	2 [1]				2 [1]		9 [7]
Pachycephalidae																								
Colluricincla harmonica	1 [1]	1 [1]	2 [2]	2 [2]		2 [1]		2 [2]		2 [1]	6 [4]		2 [1]	1 [1]				2 [2]	2 [2]					5 [5]
Pachycephala pectoralis		2 [2]	1 [1]		1 [1]	4 [2]	2 [2]	1 [1]		9 [5]	2 [2]		3 [2]	1 [1]	1 [1]			2 [2]	15 [1]					7 [7]
Pachycephala rufiventris			4 [3]			4 [1]		6 [4]		4 [3]	3 [2]		2 [2]		1 [1]	2 [1]		2 [2]	15 [1]		1 [1]	1 [1]		21 [19]
Artamidae																								
Artamus cinereus																1 [1]					2 [1]	16 [3]		10 [3]
Artamus cyanopterus								6 [1]	4 [1]	7 [2]			1 [1]				5 [1]							3 [1]
Cracticus tibicen		1 [1]	8 [3]	1 [1]	2 [1]		2 [1]		2 [1]		27 [11]	16[2]		7 [2]	17[5]	1 [1]	47 [21]	24[14]		1 [1]		48 [19]	1 [1]	68 [33]
Cracticus torquatus		1 [1]				1 [1]	5 [3]	3 [3]	2 [2]	3 [3]	5 [5]				4 [4]			2 [2]		1 [1]		2 [2]	1 [1]	14 [14]
Strepera versicolor			1 [1]		5 [4]													2 [2]						
Rhipiduridae																								
Rhipidura albiscapa	3 [3]	6 [3]	9 [7]	5 [4]	4 [3]	8 [3]	9 [4]	10 [7]	3 [2]	13 [4]	15 [14]	4 [3]	2 [2]	2 [2]	2 [2]	2 [2]	4 [4]	11 [6]	15 [1]	1 [1]	1 [1]	4 [3]		22 [22]
Rhipidura leucophrys								1 [1]		2 [1]	1 [1]				1 [1]		2 [2]			4 [4]		9 [7]	2 [2]	11 [11]
Corvidae																								
Corvus coronoides	4 [2]	7 [4]	2 [2]	2 [1]	1 [1]	7 [3]	5 [3]		5 [3]	5 [3]	14 [9]		1 [1]	1 [1]	1 [1]	3 [2]	62 [41]	14[10]	25 [1]	5 [3]	1 [1]	54 [29]	2 [1]	96 [51]
Monarchidae																								
Grallina cyanoleuca															1 [1]							5 [3]		5 [4]
Petroicidae																								
Eopsaltria australis					1 [1]			1 [1]	1 [1]	4 [1]									25 [1]					
Petroica boodang					[1]	2 [1]			3 [2]				4 [2]				1 [1]							2 [2]
Megaluridae																								
Megalurus grammurus																								2 [1]
Timaliidae																								
Zosterops lateralis	35[6]	15 [3]	2 [2]	15 [3]	4 [2]	32 [5]	43 [4]	32 [2]	5 [2]	17 [3]	51 [13]				5 [4]	3 [2]	10 [6]	8 [3]		19 [5]		5 [2]	6 [3]	25 [20]
Hirundinidae																								
Hirundo neoxena	21[1]	20 [1]							5 [1]	6 [1]								1 [1]		55 [9]	21 [3]	13 [4]	4 [1]	19 [10]
Petrochelidon nigricans	8 [1]	2 [1]			1 [1]		6 [1]	3 [2]	9 [3]	9 [2]				1 [1]			1 [1]				11 [2]	4 [2]		47 [13]
Nectariniidae																								
Dicaeum hirundinaceum		1 [1]																						1 [1]
Motacillidae																								
Anthus australis											2 [1]						1 [1]							1 [1]
Tot no individuals/[records]	9 [26]	76 [29]	103 [50]	64 [26]	73 [41]	129 [46]	247 [52]	164 [62]	86 [39]	151 [51]	298 [141]	39 [14]	32 [22]	26 [20]	70 [45]	59 [26]	516 [146]	144 [88]	565 [28]	149 [53]	136 [45]	289 [125]	87 [39]	1220 [573]