# Byron Wetlands and Vallances Road Avifauna Survey



Annual Report 2013



This report has been commissioned by Byron Shire Council Prepared by Jan Olley of Byron Bird Buddies



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# Acknowledgements

This Byron Wetlands and Vallances Road Avifauna Report was prepared with input from members of Byron Bird Buddies.

Byron Bird Buddies would like to especially thank members of Brunswick Valley Birdwatchers and BirdLife Northern Rivers, who assisted with field surveys.

BBB are very grateful to Debra Pearse, Ron Buckstein, Mandy Lisson, Ross Hollands and Anne Jones for their wonderful photographs and Anne Jones for proofreading and editing.

For baseline records of bird sightings, we thank David Stewart for the Byron Wetlands list and Dr Mark Fitzgerald for the Vallances Road list.

Cover Photograghy: Black-fronted Dotterel at Byron Wetlands by Ron Buckstein, 2013



Black-winged Stilts - Byron Wetlands - Jones

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Bird Watchers at Byron Wetlands 2013 - Lisson

# **1.0 Introduction**

Byron Bird Buddies (BBB) has provided Byron Shire Council (BSC) with four avifauna survey reports, at Byron Wetlands (Byron Bay) and Vallances Road (Mullumbimby) STP water augmentation sites, since 2010. As with the objective of the previous reports the purpose of this study is to build on the results of monitoring avifauna, in order to determine trends in avifauna diversity and abundance at the two sites. This report provides an analysis of avifauna observations and a record of the observations in an Excel Spreadsheet.

## 1.1 Background

Byron Bird Buddies is a not-for-profit organisation and a locality group of Brunswick Valley Landcare Inc. BBB undertakes community avifauna education, monitoring and conservation activities within Byron Shire and extends the education program into surrounding shires as required.

BBB has been monitoring bird populations in the Byron Shire since 2004. Examples of the monitoring reports for the Belongil Estuary, and other areas, are listed on the BBB website at <u>www.byronbirdbuddies.com.au</u>. Observation results are also distributed to Byron Shire Council Biodiversity Unit, NSW National Parks and Wildlife Service (NPWS) and BirdLife Australia (BLA) in order to assist with the monitoring of Australian bird populations. BBB is also involved with the Australia-wide Shorebird 2020 survey.

## 1.2 Byron Wetlands

The construction of the West Byron Sewage Treatment Plant (STP) commenced circa 1987. The 105 hectare site was typically low lying coastal plain comprising paperbark swamp forests, sedgelands and fernlands prior to the construction of the STP. The wetlands now comprise a number of settling ponds, "Cell A" through to "Cell J", with "Cell H" being specifically managed with regard to threatened species, migratory waders and regionally significant species. Cells A and B are not monitored. The legislated management requirements were established to ameliorate ecological losses associated with the development of the STP. A variety of records of water levels, plant diversity and monitoring measures are required to maintain the habitat diversity and provide base levels of data for the assessment in addressing any deleterious changes (West Byron Wetlands "Cell H" Management Plan Feb. 2006).

Until recently the wetlands has been relatively isolated by mainly natural vegetation on four boundaries. In March 2010, the vegetation on the southern boundary was cleared for the development of the West Byron Regional Sports and Cultural Complex with very little natural vegetation buffer zone remaining between the properties. On the NE boundary of the wetlands Bayshore Village, a proposed 68 dwellings development, commenced clearing in 2000 and further clearing occurred in 2011. No further development has occurred at the site since 2011, except for the placement of some fill material. In the current development plan, a 20 m buffer zone with vegetation enhancement and the creation of a frog habitat is now proposed along the boundary. The protection measures for frog habitat are similar to the goals for the protection of avifauna species and may prove beneficial to the wetlands.

As stated in previous reports, avifauna monitoring in the wetlands was commenced in 2000

by David Stewart and was maintained up until the end of 2005. Data results from this time are included in an Excel spreadsheet developed by BBB. However, David Stewart's data between 2003 and the end of 2005 have not been made available for inclusion in this, or any of the previous reports. BBB members commenced recording bird data irregularly from the end of 2005, with more regular monitoring commencing in May 2008 and continuing to the present day. The data continues to be provided to BSC annually, in an Excel spreadsheet, with this report.

The constructed wetlands provide a variety of water levels and plant diversity for avifauna species. The object of the West Byron Wetlands "Cell H" Management Plan Feb. 2006, for Cell H states; "to maintain suitable conditions for threatened species and some other target species such as migratory waders, and regionally significant species. Species identification in Cell H have been tabulated, with discussion on relevant management issues, for each target species. The Plan gives special consideration to migratory waders, noting species habitat requirements of those species likely to utilise Cell H. Management techniques that maintain mudflats and open flyways are addressed due to their importance to migratory waders". However, for the past couple of years, there has been very little exposed mudflats suitable as roosting sites for wader species in Cell H. This BBB understands, is due to excess rainfall and the inability to drain the excess water out of the Cell at a rate suitable to maintain areas of exposed mud. However, the water levels in Cells, D, E, J and I, have varied and have provided an alternative area where exposed mudflats are suitable for roosting and feeding, especially for shorebirds and waterbirds. Due to the poor condition of the reeds, thought to be caused by the purple swamphens that feed on the roots and crush the reed tops for nest building, a large section of Cell D has been covered in netting since 2012 to exclude the swamp hens. The reeds are now recovering, especially the middle and western sections, and in the east much of the muddy sections are covered in long grass with the exception of a small section at the very end which remains moist and muddy and is a suitable habitat for shore and waterbirds. The east area can retain water after rainfall but only for a short period.



Byron Wetlands - Lisson

### **1.3 Vallances Road**

Byron Shire Council purchased land at Vallances Road in 1999 for the development of the Mullumbimby Sewage Treatment Plant. The 85 hectare site lies adjacent to the Brunswick River opposite the Mullumbimby Township. Prior to 2006 when work commenced, the site was used as a grazing property. Most of the land had been cleared to the rivers edge, with some scattered mature trees and small patches of remnant vegetation remaining along the river banks and at the edges of the two billabongs or oxbow lagoons. The small areas of remnant vegetation contain communities of saltmarsh, mangroves, reed beds, paperback swamp forest and camphor laurel forest.

Since 2006, BSC has extensively re-vegetated and fenced the site and removed many of the camphor laurel trees, especially in the riparian zones along the river and the edges of the billabong and salt marsh. The plantings are now well established and weed management is continuing at the site keeping the impact of weeds in the re-vegetated areas to a minimum. Some grazing of cattle continued on site up until mid 2010 and ceased for a couple of years when the grass, which was kept short by the cattle, flourished and in some areas was impossible to penetrate. Cattle grazing recommenced in July 2012 and cattle are now rotated through the paddocks resulting in short grass being maintained in most paddocks. BBB commenced avifauna monitoring in May 2007 and data is recorded in an Excel spreadsheet and provided to Byron Shire Council annually. The spreadsheet also includes the results of avifauna surveys conducted by Mark Fitzgerald in 2007 and 2008.



Vallances Road - Jones



Royal Spoonbill - Jones



Figure 1. Byron Wetlands transect and locality grid Map. Source - Byron Shire Council

Track walked for the four hourly surveys identified as red.





Track walked for the four hourly surveys identified as pink - Black line indicates an internal road

## 1.4 Objectives

As for the previous reports the objectives continue to be:

- To identify all known bird species utilising the study sites
- To count waterbird and shorebird numbers
- To identify avifauna listed in the NSW Threatened Species Conservation Act (1995)
- To identify shorebirds covered by International Agreements, such as the JAMBA, CAMBA and ROKAMBA Agreement with Japan, China and Korea
- To identify breeding activity
- To present data in an Excel spreadsheet
- Report on trends in observation, diversity and abundance and possible suggested reasons for change in numbers and distributions that are occurring
- Report on anecdotal information about other species
- To provide information that may be of relevance to the management of the sites
- To produce an annual report that summarises the bird activity at both sites.

# 2.0 Field Survey Methods

## 2.1 General - Byron Wetlands and Vallances Road

Avifauna monitoring carried out at both sites by BBB conforms to the requirements of BirdLife Australia's – Atlas of Australian Birds 'Area Search' which is suitable for wetland sites. The 'Area Search' allows for listing of birds surveyed beyond 500 m, but within 5 km, of a central point. Records of rare or one-off sightings that may be reported by other reputable bird observers known to BBB will be recorded as an 'Incidental Search'. Using a format that is consistent with the requirements of BirdLife Australia allows for public distribution of critical data.

At commissioning of avifauna monitoring for both sites, a transect and a map grid was agreed to by BBB and BSC that crossed through a variety of ecotones. These transects and grids continue to be used to identify and pinpoint the location of a bird when observed. At Vallances Road, in 2011, the resurfacing of the road to the newly constructed buildings of the STP improved vehicle access to the property and bird species observed along the road have been included in surveys since that time. Locality of observation is defined by 200 m<sup>2</sup> grids overlaying the site. If a species is observed across more than three cell they are recorded as being in all cells (ALL) as they are generally dispersed throughout the site (refer to Figures 1 & 2).

Surveys are conducted during a range of daylight hours commencing from early morning through to early evening and several hours after sunset. All bird species, within approximately a 1 km radius of the transect, were recorded, consistent with the requirements of BirdLife Australia reporting methods which means only reporting birds in a defined area, only recording if certain of identification and aiming to observe with minimal disturbance. If identification is disputed or uncertain, it is noted that confirmation is required.

BBB agreed to conduct a total of at least 6 x 4 hourly (or longer) surveys at each site: three morning surveys and three evening surveys during a twelve month period.

Birds observed during other surveys, either for Shorebirds 2020 or during public guided walks, are also recorded. These are considered only partial or incidental surveys, even though they were conducted while traversing the agreed transect as they were not necessarily conducted over the length of the survey transect and were usually less than four hours in duration. One of the three nocturnal surveys was conducted by Steve McBride. Details of dates and times are provided in **Table 1**.

At Vallances Road, five surveys were conducted for this reporting period; three diurnal and two nocturnal. In the previous report for 2012, many scheduled surveys were postponed due to rain and the last of the six surveys were conducted in January 2013 and included in the 2012 report. For reporting purposes this was not satisfactory and BBB would aim to conduct future surveys in a calendar year. Details of dates and times are provided in **Table 2**.

All relevant data on endemic, migratory, shore, water and threatened avian species was recorded when reported by the observer including behaviour such as flight, roosting, feeding, breeding activity, locality and whether the bird was identified by call. Also recorded were weather and tidal conditions, date and time and anecdotal information that may be relevant to the management of the sites, and these records are entered into an Excel spreadsheet, **Appendix 1 & 2**.

The report does not aim to separate four-hourly surveys from the partial surveys, and does not aim to comprehensively analyse the data recorded. As a monitoring program the data is not collected under strict avifauna research conditions and BBB members are not professionally trained ecologists.



Cattle Egrets - Pearse

## 2.2 Call-playback

BirdLife Australia has reported that frequent use of call-playback at survey sites and at sites where there is high visitation is disturbing to birds, especially if they are breeding. BBB aims to keep call-playback to a minimum. All bird calls are sourced from the Michael Morcombe E guide to Australian Birds and are played through a small speaker. Call-playback is used usually to verify a bird's call and to survey for nocturnal species.

## **2.3 Spotlighting**

On nocturnal surveys a one million candle power spotlight was used at both sites.

## 2.4 Byron Wetlands Survey Dates and Times

At Byron Wetlands a total of 17 surveys were conducted January 16<sup>th</sup> 2013 and December 12<sup>th</sup> 2013 with a total of 66.15 hours of survey time, 61.05 daylight hours and 5.10 nocturnal hours.

All 17 surveys were conducted utilising the same transect, but only six surveys were conducted over the entire transect, therefore the remaining eleven surveys can only be considered partial or incidental surveys. BBB considers that it is important that the observations recorded during these partial surveys are included with the agreed 6 x 4-hourly surveys being undertaken by BBB. Avifauna moves in the environment according to conditions and species may not be detected on the BBB 4-hourly surveys, therefore they add additional knowledge to the records of species utilising the sites.

					Tota	l Hours	
Ref No.	Date	Time	Who	Diurnal	Nocturnal	Call- Playback	Spotlight
1	16/01/13	16.30 - 21.30	BBB	3.30	1.30	Yes	Yes
2	20/01/13	08.00 - 11.00	BBB - 2020	3.00			
3	06/03/13	08.00 - 13.00	BBB - BVBW	5.00			
4	17/03/13	10.55 - 14.30	BBB – 2020	3.35			
5	06/04/13	17.20-19.00	Steve McBride	1.00	0.40	Yes	No
6	18/04/13	08.00 - 11.00	BBB - 2020	3.00			
7	19/05/13	14.00 - 19.00	BBB	3.30	1.30	No	No
8	15/06/13	10.30 - 12.30	BBB - 2020	2.00			
9	10/07/13	08.00 - 13.00	BBB - BVBW	5.00			
10	28/07/13	10.10 - 16.30	BBB - 2020	4.10			
11	250/8/13	10.30 - 14.30	BBB - 2020	4.00			
12	21/09/13	08.00 - 12.30	BBB – 2020	4.40			
13	29/09/13	15.00 - 19.30	BBB	3.00	1.30	Yes	Yes
14	13/10/13	10.00 - 15.00	BBB - 2020	5.00			
15	25/10/13	17.00 - 18.00	BBB	2.00			
16	17/11/13	08.00 -13.00	BBB	5.00			
17	22/12/13	10.45 -13.45	BBB - 2020	3.00			
	Total H	lours = 66.15 hi	ſS	61.05	5.10		

Table 1 -	<b>B</b> vron	Wetlands -	- Survey	Dates	and '	Fimes
I UDIC I	Dyrom	v v c c c c c c c c c c c c c c c c c c	Survey	Dates	una .	

Key to Surveys: Blue - BBB x 4-hourly: Yellow - non-BBB: Unshaded - Shorebird 2020 & Partial survey.

## 2.5 Vallances Road Survey Dates and Times

At Vallances Road five avifauna surveys were conducted between March 22<sup>nd</sup> 2013 and November 27<sup>th</sup> 2013 with a total of 25.15 survey hours: 22.30 daylight hours and 2.45 nocturnal hours.

Rof					Total	Hours	
No	Date	Time	Who	Diurnal - hrs	Nocturnal - hrs	Call-Playback	Spotlight
1	20/03/13	08.00 -13.00	BBB - BVBW	05.00			
2	18/05/13	14.00 - 19.00	BBB	03.00	2.00	Yes	Yes
3	14/07 /13	07.30 -13.00	BBB - BLNR	05.30			
4	28/09/13	15.00 - 19.45	BBB	04.00	0.45	Yes	Yes
5	27/11/13	08.00 -13.00	BBB - BVBW	05.00			
	Total Hours = 25.15 hrs				2.45		

Table 2 - Vallances Road- Survey Dates and Times

Key to Surveys: Blue - BBB x 4-hourly:

# **3.0 Results of Byron Wetlands Surveys**

## 3.1 Results - General Observation

A total of 227 avifauna species have been recorded at the site, and for this reporting period 153 species were recorded between the 16/1/13 and 22/12/13. This is one species less than the highest number of species recorded on two previous report periods. It is 13 more than in the last report period and 18 more than the BBB original survey period conducted in 08/09. This year three new species were observed for the site; the Black Kite (BBB), Black Falcon (Hans Wohlmuth) and the Long-billed Corella (Steve McBride).

**Table 3** provides a breakdown of avifauna species observed during 2012 into broad family groups and compares them with the total number recorded for the site since 2002. The table provides a comparison to past data and gives a broad indication of species abundance trends for the site.



White-breasted Woodswallow - Hollands



Black-shouldered Kite -Hollands



Silvereye - Hollands

Byron Wetlands										
		Total	Total	Total	Total	Total	Total			
Family Group	Family	16/01/13 21/12/13	13/01/12 30/12/12	21/8/10 12/01/12	08/08/09 06/07/10	06/07/08 30/06/09	Species for site			
1	Mound-Builders & Quails	2	1	2	2	2	4			
2	Swans, Geese, Ducks & Grebes	13	7	10	9	10	17			
3	Pigeons & Doves	7	6	9	7	6	12			
4	Frogmouths, Nightjars & Swifts	1	1	2	1	1	2			
6	Frigatebirds, Gannet & Cormorants	5	5	5	4	6	7			
7	Herons, Ibis, Spoonbills & Allies	14	14	15	14	14	17			
8	Birds of Prey	10	10	12	12	8	19			
9	Brolga	0	0	0	1	0	1			
10	Crakes, Rails & Gallinules	9	8	9	9	4	11			
11	Shorebirds	12	10	10	13	8	26			
13	Gulls & Terns	1	2	3	2	1	5			
14	Cockatoos & Parrots	8	8	7	6	7	11			
15	Cuckoos	5	7	6	7	6	9			
16	Owls	1	0	1	1	0	3			
17	Kingfishers, Rollers & Bee-eater	6	6	6	6	5	6			
20	Fairy-wrens	3	3	3	3	3	3			
21	Scrubwren, Allies & Pardalotes	5	4	6	8	7	9			
22	Honeyeaters	13	11	10	12	12	13			
23	Quail-thrushes & Allies	1	1	1	1	1	1			
24	Cuckoo-shrikes & Trillers	2	3	3	4	3	5			
25	Whistlers & Shrike-Thrushes	6	6	6	5	5	6			
26	Woodswallows	2	1	1	1	1	3			
27	Magpies & Butcherbirds	5	5	5	5	5	5			
28	Fantails	2	2	2	2	2	3			
29	Ravens & Mud-nesters	1	1	1	1	1	1			
30	Flycatchers & Monarchs	3	3	4	3	3	6			
31	Robins, Old World Warblers & White-eyes	6	6	6	6	6	9			
32	Swallows & Martins	3	3	3	3	3	3			
33	Thrushes, Starlings, Mynas & Flowerpeckers	2	2	2	2	2	4			
34	Finches, Mannikins & Sparrows	3	3	3	3	3	4			
35	Pipits, Wagtails & Others	2	1	1	1	0	2			
	Total Species	153	140	154	154	135	227			
	Total Family Group = 31									

Table 3 - Byron Wetlands Avifauna Abundance by Family Groups

The abundance of species recorded relative to the preferred foraging habitats is provided in **Table 4**, while the Excel spreadsheet data at **Appendix 1**, records the habitat the bird was in at the time of observation. Many bird species can utilise a number of different habitats but have a tendency to forage in one particular type of habitat. As previous reports have established the habitats a species would dominantly prefer, the data spreadsheet now provides one column dedicated to the preferred habitat. A preferred habitat column will give a consistency in reporting of the habitat for the particular species. It is anticipated that the preferred habitat is unlikely to vary, but any variation can be included in the notes.



Restless Flycatcher - Pearse

Grey Teal - Pearse

Five broad representative habitat types have been identified at this site, including the air space above the wetlands. As stated above, the habitat is allocated according to which is considered the most dominant food habitat for a particular species, however, it is acknowledged that many species forage in all habitats. It is also acknowledged that birds may use different habitats not only to forage, but for shelter, roosting and to nest according to their needs and characteristics. For example, some insectivores hunt their food in the air space and nest and roost in the forest trees, while some birds observed in the air space are simply passing over the site. To some extent an attempt has been made to identify the difference on the spreadsheet and for a full record of the bird's habitat, family group and the grid where the bird was observed, refer to the Excel spreadsheet at **Appendix 1**.

Byron Wetlands											
Habitat Type	Forest &/or Trees (2)	Freshwater Wetlands, moist or muddy areas (3)	Pasture or grassed areas / buildings (5)	Reeds & low growth (8)	Air Space (OH)	No Records	Total				
Species 09-10	56	44	11	13	24	6	154				
Species 10-12	64	41	14	16	19	0	154				
Species 2012	55	41	12	11	21	0	140				
Species 2013	62	46	11	20	13	0	153				

Table 4 - E	Svron V	Wetlands .	Avifauna	Abundance	bv	Habitat	Types
I WIT I	<i>y</i> ron y	, culuinas i	L L V II CU	indunite	~ ,	IIuoitut	<b>1</b> , pes

**Table 5** below is a general categorisation of the species number relative to their movement patterns, as identified in a number of field guides. However, further analysis is required to determine the significance of the differences. Some species may need re-classifying, for example some nomadic and migratory species are known to be sedentary at a particular site and vice versa. Since the 2009-10 reporting period the Excel spreadsheet has a column dedicated to movement patterns, so the original classifications will be maintained to give a consistency in reporting.

Sedentary 80	Nomadic									T																	
80		Vagrant			Migra	tory			Endemic	Total																	
00	64	9			73	;			1	227																	
62	45	2			45	5			1	154																	
69	40	2			42	2			1	154																	
60	35	0			44	ŀ			1	140																	
65	41	2			45	;			0	153																	
wrens, grassbirds,	duck, some raptors, doves, pigeons, some honeyeaters, waterbirds, cockatoos, some shorebirds	White- browed	Mig Wit Aust	rates thin tralia	Mig	rates Au	Externa stralia	ıl to		1																	
butcherbird,		Crake,	Max.	47	Max	x.	2	7	р.																		
finch,		pigeons, some honeyeaters,	pigeons, some honeyeaters,	some honeyeaters,	some honeyeaters,	some honeyeaters,	some honeyeaters,	some honeyeaters,	some honeyeaters,	some honeyeaters,	some honeyeaters,	some	some	some	some	some	some	some	Little	09-10	32	09-10		1	5	consider	reports ed the
thornbill,												Currew,	10-11	31	10-11		1	1	Comb- c	rested							
shrike- thrush some		Goose,	2012	32	2012		1	2	Jacana as e	endemic																	
honeyeaters, some shorebirds		yeaters, cockatoos, ome some rebirds shorebirds	Painted	2013	33	2013		1	2	in Byron	Shire.																
			some Snipe shorebirds	some Snipe shorebirds	ne some birds shorebirds	fant cuck	ails, toos,	Nor shoreb	irds	Shore	ebird	Technica is not cor	lly this rect so														
			whis	tlers,	Max	10	Max	17	from this	s 2013																	
			SOI honou	me	9-10	8	09-10	7	be consi	dered																	
			rant	ors	10-11	6	10-11	4	sedent	tarv																	
			kingfi	shers,	2012	7	2012	5	] ~~~~~	J																	
			flycatchers,		2013	5	2013	7																			
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Table 5 - Byron Wetlands Avifauna Abundance by Movement

- Sedentary or local or resident are non-migratory and tend to remain in one area or territory e.g. wrens. These birds are likely to nest in the wetlands or close by and may disperse locally in response to food supply. It is considered that bird species in this group should be relatively stable and observed during most 4hrly surveys.
- Nomadic are species that undertake wandering travels of irregular patterns in timing direction or distance. Some examples include; mistletoebird, whistlers, flycatchers and martins. These birds move in response to food and weather conditions and may be utilising the site for food supply, as a "stopover" or even to nest and roost. Species in this group will vary according to conditions both within and outside the wetlands.
- Vagrant or Accidental are species that stray beyond their usual range or migration. The movement may be from within Australia or external, for example, the White-browed Crake recorded in 2009 and the Painted Snipe in 2011 both move within Australia, while the Yellow Wagtail, last seen in 2008, migrates from Asia. Species in this group will vary greatly and an observation would be considered "lucky".
- Endemic are species that are unique to a place or region and found <u>naturally</u> nowhere else. In the past BBB reports, the Comb-crested Jacana has been considered endemic to

the Byron Wetlands in Byron Shire, however this may not be technically correct, in this and future reports it will be considered a sedentary species. Although populations of this species are variable at the site, it is expected that there should always be a record of the species on each survey unless conditions in the habitat change.

• **Migratory** birds undertake regular seasonal journeys to breed. The migration may either be from within or external to Australia and examples are the cuckoos and shorebirds. Species in this group will vary due to external and internal factors.



Comb-crested Jacana - Buckstein

#### 3.2 Results - Call-playback

On the three occasions call-playback was used to detect Grass Owl, Barn Owl, Southern Boobook Owl, Tawny Frogmouth, Owlet Nightjar, Pale-vented Bush-hen and the Little and Australasian Bitterns, there was no response from any of these species. Byron Wetlands is a known habitat for the Australasian and Little Bittern, and BBB reports results of callplayback for these species to the BirdLife Australia annual surveys for the Australasian Bittern and Little Bittern.

**Note:** other surveys not involving BBB may also have used call-playback. As previously reported in 2011, the MP3 technology has vastly improved in recent years allowing any person to utilise amplified bird calls through MP3 players, Smart Phones or Touch Pads. Also, for a very low price, there are two E guides to Australian Birds on the market which contain bird pictures, information and calls combined on the one program and are therefore available to anyone who is interested. BBB's intention is to limit the use of this technology to confirming unidentified calls and nocturnal surveys, and for a limited number of species.

#### 3.3 Results – Spotlighting

No nocturnal birds were detected.

#### 3.4 Results – Other Fauna

A number of other fauna species were also observed; Usually a total of between 1 - 6 Swamp wallabies were detected feeding in the mowed area on most visits or disturbed from the marshes. On two occasions dead wallabies were observed and the state of the carcasses suggested they had been mauled.

- 06/01/13 Echidna observed in the carpark
- 06/01/13 Red-bellied Black Snake
- 06/01/13 Flying foxes at dusk
- 20/01/13 Labrador dog between cell C & D
- 06/03/13 1 x carpet python

#### **3.5 Discussion**

During the first six months of the year the Northern Rivers experienced numerous days of wet and adverse weather. At the end of February the area was battered by wind and rain from ex-Tropical Cyclone Oswald, and three weeks later by a devastating East Coast low which brought down many trees at the wetlands, in particular the melaleucas along the northern edge of H cell. In November a severe hail storm stripped most of the trees of foliage. Rain and wind can affect tree blossom and nectar production and alter the depth of water in all the ponds and, consequently, may affect the avifauna populations in habitats. However, despite the weather conditions the records are showing that the abundance of avifauna and species number during 2013 are stable with the expected variation due to dispersive, nomadic and migratory behavior.

#### 3.5.1 Discussion - Terrestrial Avifauna

Threatened species, shorebirds and water bird species will each be discussed under separate headings below. The results from the surveys in this reporting period show that the numbers of terrestrial bird species visiting the site remains relatively stable with only small variations in species numbers for each family group. Many of these terrestrial birds have different patterns of movement and this could account for some small variations in species numbers. It is also possible the species continue to inhabit the site but may not be detected or may not be onsite on the day of the survey. The only group where the species number is lower than any of the previous years of monitoring is the Cuckoo-shrike and Triller group. There are five species in the group and most years three or four are usually observed, but only two were observed for this period. All five species are either nomadic or migratory species so it would be normal for the numbers in this group to vary. Of this group, and unusually, the White-winged Triller has been a rare visitor to the site in the past, but this year a pair was observed for several months and, by their behaviour it is highly probable they nested in cell G.



Black Kite - Pearse

Brahminy Kite -Pearse

Australian Hobby -Pearse

From the Birds of Prey group, 10 birds were observed over the wetlands in the last two years from a total of 19 for the site. The Birds of Prey group of species can vary for a number of reasons; many are uncommon, nomadic and migratory, also considerable knowledge and skill is required to identify them, and species can either be a misidentification or errors in identification can occur. Of particular interest this year two raptor species observed at the site were new.

The Black Kite is a common species in northern Australia and west of the coastal ranges. They are usually seen in large numbers over slaughter yards, rubbish dumps and cattle properties and it is a rare visitor to coastal NSW. For some reason this year, most likely the drying conditions in the west and particularly the very dry conditions in western Queensland which failed to benefit from the rains, many coastal areas along the NSW coast from the Queensland border to Sydney reported flocks of Black Kites during August and September. The Black Falcon is an uncommon nomadic species, and is also a bird of drier areas. A single bird was identified by Hans Wohlmuth, who has considerable knowledge of Australian raptors. The bird was observed flying over cells D and E. This year, unusually the species was also recorded at several other locations in other the Northern Rivers.

Other observations of note, include a white morph phase Grey Goshawk, observed flying over cells D & E in March; one Silver-eye, observed in June, amidst a group, was clearly a sub-species *lateralis* ( which migrates from Tasmania) with brown flanks and white throat; larger then usual numbers (30) of Brown Honeyeaters were observed feeding on flowering melaleuca in April and May; recorded on the mowed and built structures of the sportsfield in May and June was a large gathering of crows (30) and Common (Indian) Mynas (7). Since July, the crows continue to be observed but in fewer numbers and the Mynas have not been



White-winged Triller - Hollands

Eastern Yellow Wagtail - Pearse

observed, except for one in September. Also occupying the sportsfield is the Australian Pipit, once regularly observed at the wetlands but rarely recorded in the past few years, since July 2011 the cleared grass areas of the sportsfield is now the preferred habitat for this species.

A single Eastern Yellow Wagtail was observed by Ron Buckstein on 6<sup>th</sup> October 2013. The species breeds in temperate Asia and migrates south in the summer months. It is regularly

recorded in northern Australia but is considered a vagrant species in the rest of Australia. The first and last time the species was recorded at the wetlands was 28<sup>th</sup> February 2007.

#### 3.5.2 Discussion – Water Avifauna

Waterbirds is a loose reference to birds that are generally associated with water, unlike shorebirds there is no scientific classification of water birds as each species have their own scientific classification. For comparisons over the reporting years see **Table 3.** As with previous reports BBB has grouped the waterbirds into six family groups according to the grouping in the Excel spreadsheet.

The six groups are:

- Group 2 Swan, Geese, Ducks & Grebes 13 species in 2013
- Group 6 Frigatebirds & Cormorants -5 species in 2013
- Group 7 Heron, Ibis, Spoonbills & Allies 14 species in 2013
- Group 8 Brolga 0 species in 2013
- Group 10 Crakes, Rails & Gallinules 9 species in 2013
- Group 13 Gulls & Terns 1 species in 2013

The fresh water cells provide suitable habitat for these birds and all cells within the wetlands are utilised by most groups at some time; some species use the water body and may either float eg Pacific Black Duck, or dive eg Australasian Grebe and Hardhead, some only use the moist edges such as the Ibis, and the terns are usually observed overhead. Within these groups of waterbirds only two threatened species were recorded this year which compares with 2010-11 when five threatened species were observed. The Brolga, Magpie Goose and Australasian Bittern were not observed during 2013 (3.5.4 Threatened Avifauna)

Populations in these groups can vary greatly as many are nomadic or migratory species. For the past couple of years substantial rainfall has occurred in most parts of western NSW and Central Australia, but the area is now drying out, and waterbirds respond to these events especially to breed during the wet period. For 2013 the rainfall has been less with some areas being exceptionally dry. During any movement of waterbirds they are likely to make short stops at suitable habitats which could account for the increase or decrease in numbers at times. Species variation in numbers is shown in **Table 6** for some of the species.

**Family Group 2: Swans, Geese, Ducks and Grebes;** Ten duck species were recorded this year which includes some species that are rarely observed at the wetlands. Ron Buckstein reported a single Pink-eared Duck in July, the last observation was a record by Jack Willows before the year 2000; Freckled Ducks, a threatened species, were observed on several surveys and had not been recorded since 2006; three separate sightings of an Australian Shoveler, in January, May and November with the last previous record being in 2008; two reports of Chestnut Teal in March and November, the species is only occasionally recorded in the wetlands; observations of both the Plumed and Wandering Whistling-Ducks were again observed on several occasions. There were two records of Black Swans nesting. Of the pair that nested in September, one adult was found dead a few weeks later, possibly a fox kill and of the five cygnets that hatched only one survived to be full grown. The Swan's first nest was destroyed by the storms in January. The Australasian Grebe was observed nesting in March and, unusually, the Hoary-headed Grebe was observed on two occasions in June and July with Megan Rush reporting 12 on July 28<sup>th</sup>. The Pacific Black Duck also nests at the wetlands. Of

note were large numbers of duck species recorded at Casino wetlands throughout the year, an indication the species were returning to the coastal areas as the ephemeral wetlands in the west dry out.

Family Group 6: Frigatebirds, Gannet, & Cormorants; During 2013, all the cormorant species were observed. The Little Pied Cormorant was also observed nesting in the melaleucas at the west end of Cell F. In the past the nests in this area appear to be shared with other cormorant species such as the Great Cormorant and the Little Black Cormorant and possibly this occurred again this year, but nests sites are difficult to observe.

Family Group 7: Herons, Ibis, Spoonbills & Allies; As in previous years, Cattle Egrets and Australian White Ibis fly into the wetlands in large numbers, from surrounding pastures at sunset. The Straw-necked Ibis have also been flying into the wetlands to roost at sunset. All Egret species in this group were present on most surveys. Less common birds observed for this period were the White-necked Heron, Yellow-billed Spoonbill and Nankeen Night Heron. Also in this group the Black-necked Stork will be discussed under 3.5.4 Threatened Avifauna. There were no observations of the three rarely sighted Bittern species. Family Group 10: Crakes, Rails and Gallinule; The sedentary Purple Swamphen, Dusky Moorhen and nomadic Eurasian Coot have all been present in large numbers.



Glossy Ibis - Jones

Plumed Whistling-Ducks - Pearse

Black Swan - Iones

Again, juveniles of the moorhens and swamphens were observed indicating that breeding occurred in the wetlands. The nomadic or migratory crakes and rails are more often heard than seen in the wetlands as they reside in the reed-beds and are only noticed if they feed on the edges. However, there were frequent observations throughout the year of the Baillon's and Spotless Crake and two records of the Australian Spotted Crake in January and February. Of the two rail species the uncommon Lewin's Rail was heard calling on one occasion, and the more commonly observed Buff-banded Rail was recorded on three surveys.

Family Group 13: Gulls & Terns; No terns were recorded this year but Silver Gulls were frequently reported flying over the site and sometimes landing in cells H and I.



Australian Spotted Crake - Pearse



Australian Pelican - Pearse



Intermediate Egret - Pearse

Name		Range		Comment for 2013
	2013	2012	2010-11	
Australian Wood Duck	0-5	0-20	2 -30	Most surveys none present
Freckled Duck	0-11	-	-	Generally absent – recorded on 5 of the 17 surveys
Grey Teal	3-160	0-25	2-60	Mostly present each survey – large no in May 2013
Pacific Black Duck	4-78	2-90	17 – 173	Always present - nest & juveniles
Hardhead	12-85	2-77	1-41	Present all surveys this year
Australasian Grebe	8-50	5-34	6 - 15	Always present
Darter	1-8	0-2	1- 75 OH	Observed all visits except for April survey
Little Pied Cormorant	0-11	0-6	1-10	Usually numbers vary between 1-5 when present possibly nesting in west corner of F cell
Little Black Cormorant	2-11	0-12	1- 60 OH	Observed most visits this year 2013 – possibly breeds Byron Wetlands
Pelican	0-3	0-2	0-3	Mostly absent - observed overhead
Black-necked Stork	0-1	0-2	0-1	Mostly absent - juvenile
Australasian Little Bittern	0	0-1	0	Absent
Eastern Great Egret	0-7	0-2	0-2	Mostly present
Intermediate Egret	0-7	0-2	0-2	Mostly present
Cattle Egret	0-280	0-150	1-250	1-2 present most surveys – arrives in large numbers at sunset
White-faced Heron	2-5	0-6	0-4	Mostly present
Australian White Ibis	3-180	0-60	4-150	Small numbers present most surveys – numbers increase on dusk
Straw-neck Ibis	0-450	0-100	0-5	Usually none during the day – arrive at sunset
Purple Swamphen	40-115	30 -220	35–86	Numbers fluctuate but always present – some nesting occurs in reeds - nest & juveniles observed
Dusky Moorhen	6-80	25-120	7–235	Numbers fluctuate but always present – assume some nesting occurs in reeds as nest & juveniles observed
Eurasian Coot	35-400	18-82	1-163	Absent for a number of years – present in large numbers this year
White-necked Heron	1-8	0-3	0-1	Present April to December

 Table 6 - Byron Wetlands Water Avifauna Population Range

#### 3.5.3 Discussion - Shore Avifauna

Twelve shorebird species were observed during 2013, this is two more species than in the two previous reporting periods. Seven of the twelve species are migratory species. Of the migratory species only one bird of the Whimbrel, Curlew Sandpiper and Pacific Golden Plover species was recorded. The rare Pectoral Sandpiper continues to visit the site for the third year and the three other migratory species are regular visitors to the site.

The remaining five shorebirds are Australian-breeding species. As in previous years the Black-winged Stilt, Black-fronted Dotterel and Masked Lapwing may have nested on-site although juveniles were not reported this year. The Red-kneed Dotterels first observed in December 2012 after an absence of 10 years, continue to occupy the site and were observed during every survey. See **Table 7** for details. The Comb-crested Jacana will be discussed

	Movement	2013	2012	2010-11	2009-10	2008-09	
Latham's Snine	Migratory	0-20	0-9	0-10	0-7	0-11	Breeds in Japan
Sharp-tailed Sandpiper	Migratory	0-13	0-13	0-10	0-29	0-14	Breeds in Northern Siberia
Comb-crested Jacana	Nomadic	0-11	1-11	3-14	3-20	3-10	Breeds in Australia
Black-winged Stilt	Nomadic	0 - 24	0 - 37	0 - 35	0 -40	0 - 27	Breeds in Australia
Pacific Golden Plover	Migratory	0-1	1-6	0-24	0-7	0-15	Breeds in Siberia/Alaska
Black-fronted Dotterel	Sedentary	2-16	0-20	2-29	2-5	2-6	Breeds in Australia
Red-kneed Dotterel	Nomadic	0-27	0-11	0-2	0-1	0-1	Breeds in Australia
Masked Lapwing	Sedentary	2-22	0-17	3-28	2-25	0-35	Breeds in Australia
Painted Snipe	Nomadic	0	0	0-1	0	0	Breeds in Australia
Red-necked Stint	Migratory	0-16	0-16	0	0-2	0	Breeds in high Arctic tundra
Pectoral Sandpiper	Migratory	0-3	0-1	0	0	0	Breeds in high Arctic tundra
Wood Sandpiper	Migratory	0	0	0	0-1	0	Breeds in Siberia
Whimbrel	Migratory	0-1	0	0-1	0	0	Breeds in low Arctic tundra
Little Curlew	Migratory	0	0	0	0-1	0	Breeds in NE Siberia
Greater Sand-plover	Migratory	0	0	0	0-1	0	Breeds in Mongolia
Bush Stone-curlew	Nomadic	0	0	0	0-1	0	Breeds in Australia
Curlew Sandpiper	Migratory	0-1	0	0	0	0	Breeds in Eastern Siberia
Total Species		12	10	10	13	8	

under 3.5.4 Threatened Avifauna. Table 7 - Byron Wetlands Shore Avifauna Populations



Latham's Snipe - Jones

Red-kneed Dotterel- Pearse

#### 3.5.4 Discussion - Threatened Avifauna

Four threatened species were recorded from a total of 17 for the site. Three were recorded during 2012 and eight were recorded during 2010-11.



Black-necked Stork - Hollands

Freckled Duck - Pearse

SPECIES	DATE Observed 2013	Date Last Observed	GRID	Current Status	COMMENTS 2013
Comb-crested Jacana Irediparra gallinacea	Of the 17 surveys conducted during 2013 the species was absent on three surveys during June, July & Sept. The longest period of absence was between September 2001 and March 2002	Since 2006 recorded on every survey. 22/12/13	D3 or Cells H & I	V	Numbers ranged from 1 to 11 per visit with the greatest number recorded in at the beginning of the year to March. They were observed feeding mainly in Cells H & I. No nesting was observed although it is unknown if the increased numbers to March was due to on-site breeding but numbers dropped after March so possibly they are dispersing birds after the breeding season. Towards the end of the year 1-3 species were again observed. It is uncertain why the resident pair of birds left the site for a short period.

#### Table 8 - Byron Wetlands Threatened Avifauna

SPECIES	DATE Observed 2013	Date Last Observed	GRID	Current Status	COMMENTS 2013
Black-necked Stork Ephippiorhynchus asiaticus	Recorded several times last year & this year observed 4 times on surveys.	18/11/12	C3 & D3 or Cell H	Е	A juvenile bird was recorded on June 14 <sup>th</sup> and as last year two birds were recorded in August and again in November. Several reports of sightings received during October & November but are not recorded. The birds appear to be occupying the site for longer periods The movement of this species is nomadic and they disperse after breeding. Up until last year only single birds have been observed in Byron Shire. Also, this year also a pair of BNS has been recorded in Brunswick Heads utilising the salt marsh and river and on flatland around Mullumbimby & likely to be the same pair. No nest site has been reported
Freckled Duck Stictonetta naevosa	Recorded in March and then on four surveys from September to December.	10/5/06 by BVBW	E3 & D3 or Cells H & I	V	Numbers ranged from 1-11. The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. Breeds in large temporary swamps created by floods in the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts and is a rare visitor to coastal NSW and Victoria during such times. Wetlands in Casino also recorded Freckled Ducks in medium numbers in 2013
<b>Rose-crowned Fruit-Dove</b> Ptilinopus regina	A single record of a single bird 16/1/13	27/1/02 David Stewart	Heard calling D2	V	Rose-crowned Fruit-Doves are found in coastal tall tropical and sub-tropical forests, and feed on berries swallowing the fruit whole. Particularly like figs and the fruit of other species of rainforest trees, palms and vines. The section of forest at the back of H cell is a suitable habitat for the species
Australian Painted Snipe Rostrratula australis	-	12/1/12	C4	Е	BBB - first record for site
Pale-vented Bush-hen Amaurornis moluccana	-	12/1/12	D4	V	BBB – first record for site
Eastern Osprey Pandion cristatus	-	2/11/11	ОН	V	BBB – likely to have visited the site in 2013 but not observed by BBB

SPECIES	DATE Observed 2013	Date Last Observed	GRID	Current Status	COMMENTS 2013
The Australasian Bittern Botaurus poiciloptilus	-	13/5/11	D4	Е	BBB
Glossy Black Cockatoo Calyptorhynchus lathami	-	2/11/11 2009	A4	V	D. Charley
Magpie Goose Anseranas semipalmata	-	23/3/11	23/3/11	V	BBB
Bush Stone-curlew Burhinus grallarius	-	0ct-Dec 2009	D3	Е	Krippner Family
Greater Sand Plover Charadriuslesxhenaultii	-	Nov- 2009		V	Steve McBride
Brolga <i>Grus rubicunda</i>	-	7/10/09		v	BBB
Square-tailed Kite Lophoictinia isura	-	No date		V	Record attributed to M. Fitzgerald
Pied Oystercatcher Haematopus longirostris	-	No date		Е	Record attributed to J. Willows
Tern Little Sterna albifrons	-	No date		Е	Record attributed to J. Willows
Eastern Grass Owl Tyto capensis	-	12/2/02		V	David Stewart

# 4.0 Results of Vallances Road Surveys

#### 4.1 Results - General Observation

The total number of species recorded for the site remains at 159 and is unchanged from the previous year. For this reporting period of surveys commencing March to December, a total of 120 avifauna species were recorded, which was one more species than in the last reporting period, but the species mix was different. A breakdown of avifauna species into broad family groups during 2013 is provided in **Table 9** enabling comparisons with the total number of species recorded during the last reporting periods, and for the site since 2007. Overall, the species diversity remains stable. No new species were recorded at this site for 2013.



Brunswick Valley Birdwatchers - Jones

	Vallances Road								
		Total	Total	Total	Total	Total	Total		
Group Ref No	Family Groups	2013 20/03/13 7/11/13	2012- 2013 25/7/12- 23/01/13	2010-2011 2/2/11- 28/12/11	2009-2010 24/10/09- 18/7/2010	2008-2009 03/05/07- 27/06/09	Max since 03/05/07		
1	Mound Builders & Quail	2	0	2	1	2	2		
2	Swans, Ducks & Grebe	5	5	4	2	2	7		
3	Pigeons & Doves	9	9	9	10	10	10		
4	Frogmouths, Nightjars & Swifts	2	2	1	1	2	3		
6	Frigatebirds, Gannet & Cormorants	4	4	5	4	5	5		
7	Herons, Ibis, Spoonbills & Allies	11	12	12	9	11	14		
8	Birds of Prey	8	11	11	10	9	15		
10	Crakes, Rails & Gallinules	3	3	4	3	4	5		
11	Shorebirds	5	6	5	4	3	7		
14	Cockatoos & Parrots	6	7	7	7	8	8		
15	Cuckoos	6	5	6	5	4	6		
16	Owls	1	0	2	3	1	3		
17	Kingfishers, Rollers & Bee-eaters	6	6	5	5	6	7		
18	Pitta & Treecreepers	1	0	2	1	0	2		
19	Bowerbirds	1	0	1	2	1	2		
20	Fairy-wrens	3	3	3	3	3	3		
21	Scrubwren, Allies & Pardalotes	8	7	9	5	5	9		
22	Honeyeaters	8	9	9	9	9	11		
23	Quail-thrushes & Allies	1	1	1	1	1	1		
24	Cuckoo-shrikes & Trillers	3	3	3	3	3	3		
25	Whistlers, Shrike-thrushes, Figbird & Orioles	6	6	6	5	6	6		
26	Woodswallows	1	0	1	1	2	2		
27	Magpies & Butcherbirds	5	5	5	4	5	5		
28	Fantails	3	3	3	2	2	3		
29	Crows	1	1	1	1	1	1		
30	Flycatchers & Monarchs	4	2	5	3	3	5		
31	Robins, Old World Warblers & White-eyes	3	5	2	4	6	6		
32	Swallows & Martins	1	1	2	3	2	3		
33	Thrushes, Starlings & Mynas, Flowerpeckers	2	1	2	1	2	2		
34	Finches, Mannikins & Sparrows	1	2	1	1	1	2		
35	Pipits, Wagtails & Others	0	0	0	0	1	1		
	Total	120	119	129	113	120	159		
	Total Family Groups = 31								

Table 9 - Vallances Road Avifauna Abundance by Family Groups

Birds were recorded in eight main habitat types as well the air space over the site. The abundance of species recorded relative to the habitat type is provided in **Table 10**.

The habitat was allocated according to the frequency that the bird was recorded in

that particular habitat. Again, as with Byron Wetlands, this broad breakdown does not demonstrate the complexity of habitats used by the birds as a great number of species forage in several habitats. For example, at Vallances Road site the ducks forage in the river, freshwater, brackish water and any other body of water in the survey area including drains. Brown Honeyeaters utilise mangroves, existing trees and new plantings. The Egrets and Herons forage along the river banks and in the brackish water of the oxbow.

For a full record of the bird's habitat, family group and the grid where the bird was observed refer to the Excel spreadsheet, **Appendix 3**.

	Vallances Road											
Habitat Type	Not recorded	Aquatic (river) (1)	Forest &/or Trees (2)	Fresh- water Wetland (3) (3)	Tidal (salt Marsh) (3A)	Man- grove -(4)	Pasture or grassed areas (5)	Reeds (8)	New Plants (6)	Over Head	Total	
08-09					0						120	
09-10	3	9	54	2	2	1	11	1	4	26	113	
10-11	0	16	44	4	14	0	11	2	22	16	129	
2012	0	6	38	0	24	2	6	6	24	13	119	
2013	0	6	40	2	14	3	11	7	21	16	120	

 Table 10 - Vallances Road Avifauna Abundance by Habitat Types



Red-backed Wren - Hollands

Many bird species utilise a number of different habitats, so to provide a consistency in reporting the habitat to where the species is recorded the majority of the time, sightings per habitat will be recorded in a column dedicated to habitats in the Excel spreadsheet. However, as the habitats within the Vallances survey area have changed dramatically since 2008; the oxbow changed from being a freshwater body to tidal and the new plantings contained many new native plant species, it is anticipated that species-preferred habitat may

change so each survey will continue to provide in the Excel spreadsheet the habitat in which the species was observed.

As discussed above, many of the birds have different patterns of movement and this will account for small variations in species abundance and diversity. It is also possible the species continues to inhabit the site but they may not be detected or they are not present on-site on the day of the survey. Some species can be sedentary, nomadic or migratory to a particular site however since the 09-10 reporting period the Excel spreadsheet has a column dedicated to movement patterns, so the original classifications will be maintained to give a consistency in reporting.

**Table 11** below is a general categorisation of the species number relative to their movement patterns, as identified in a number of avifauna field guides.

Vallances Koad										
Movements	Sedentary	Nomadic	Vagrant		Migratory		Endemic	Total		
Maximum for site	75	36	0		48		0	159		
09-10	59	18	0		36		0	113		
10-11	70	21	0		38		0	129		
2012	61	26	0		32		0	119		
2013	61	22	0		37		0	120		
				Internal	External	0	-			
Some examples	wrens, grassbirds, butcherbirds, whipbird, finches, thornbills, scrub-wrens, shrike- thrush, some honeyeaters, raptors	ducks, some raptors, doves, pigeons, some honeyeaters, waterbirds, parrots, cockatoos, some shorebirds		fantails, cuckoos, whistlers, some honeyeaters, raptors, kingfishers, gerygones	wiax.         09-10           10-11         2012           2013         Other           Max.         5           09-10         3           10-11         5           2012         6           2013         6           swifts         cuckoos           drongo         martins	o         5         6         7         Shorebird         Max.       2         09-10       2         10-11       1         2012       1         32013       1         sandpipers       snipe				

 Table 11 - Vallances Road Avifauna Abundance by Movement

- Sedentary or local or resident are non-migratory and tend to remain in one area or territory e.g. wrens. These birds are likely to nest on site or close by and may disperse locally in response to food supply. It is considered that bird species in this group should be relatively stable and observed during most 4-hrly surveys.
- **Nomadic** are species that undertake wandering travels of irregular patterns in timing direction or distance. Some examples include mistletoebird, whistlers, flycatchers and martins. These birds will move in response to food and weather conditions and maybe

utilising the site for food supply, as a "stop-over" or even to nest and roost. Species in this group will vary according to conditions both within and outside the site.

- Vagrant or Accidental species are species that stray beyond their usual range or migration. The migration may be from within Australia or external, for example the Painted Snipe in 2012 move within Australia, while the Yellow Wagtail, which may occupy areas such as the oxbow, migrates from Asia. Species in this group will vary greatly and an observation would be considered "lucky".
- Endemic are species that are unique to a place or region and found naturally nowhere else there are no endemic species for Vallances Road.
- **Migratory** birds undertake regular seasonal journeys to breed. The migration may either be from within Australia such as some birds of prey, or external to Australia examples being such as cuckoos and shorebirds. Species in this group will vary due to external and internal factors.

#### 4.2 Results - Call-playback

Previous surveys have detected the presence of the Pale-vented Bush-hen, Australain Owlet Nightjar and Australasian Bittern; Table 12 provides the result of call-playback during 2013. The Australian Owlet Nightjar was the only species that responded by call on both surveys from within Grid E5, the cleared area in the middle of the site.



Australian Owlet Nightjar - Hollands

Mangrove Gerygone - Hollands

Table 12 -	Vallances Ro	ad Response	details for	Call-playback
	vanances no	au nesponse	uccans ioi	Can-play back

Species	No of occasions	Grid	Response details
Southern Boobook	2	E3,E5	1 x response Heard calling in the distance
Eastern Barn Owl	2	E3,E5	No response
Eastern Masked Owl	2	E3,E5	No response
Sooty Owl	2	E3,E5	No response
Australian Owlet Nightjar	2	E3,E5	Call response both occasions – and good sighting on 28/9/13

#### 4.3 Results - Spotlighting

In September a good sighting of a single Australian Owlet Nightjar sitting on the fence was obtained after a response to call-playback. Spotlighting was used on two occasions and no other nocturnal fauna species were detected.

#### 4.4 Results - Other Fauna

- 20/03/13 -1 x fox visible stalking on north edge of oxbow Grid E3
- 27/11/13 2 x foxes flushed from reeds at head of oxbow Grid E3
- 27/11/13 1 x Green Tree snake in tree at edge of east oxbow- Grid E5

#### 4.5 Discussion

#### 4.5.1 Discussion - Terrestrial Avifauna

The two threatened species recorded, the Eastern Osprey and Rose-crowned Fruit Dove, will be discussed separately below (Discussion - 4.5.4 Threatened Avifauna).

In general, the results from the survey for this reporting period are showing that, overall, terrestrial avifauna visiting the site are relatively stable although, compared to 2012, the species-mix was different in some groups e.g. Doves and Pigeons, both recorded 9 species, but the Emerald Dove was not observed this year and the Crested Pigeon was not observed last year. The groups in which fewer species were recorded annually since 2007 were:

- honeyeaters 8 from a site total of 11 and one less than previous survey
- parrots and cockatoos 6 from a site total of 8 and 1 less than previous survey
- birds of prey 8 species from a site total of 15 and one less than previous survey.



Rose Robin - Hollands

Many of the honeyeaters are migratory or nomadic species and of the three honeyeater species not recorded this year one is migratory (Eastern Spinebill), one is nomadic (Striped Honeyeater) and the other (Little Wattlebird) is sedentary but will disperse locally depending on blossom. It is also possible the species continues to inhabit the site but may not be detected or they are not present on-site on the day of the survey. Also, because of the rain, there may have been a reduction in blossom and therefore reduced nectar production. Many of the trees in the re-vegetated areas, although well established, have not flowered, however, they still provide food for the insectivores and the species that are dependent on this food source are stable.

The majority of species occupied both the existing forested areas and established trees or newly planted areas, although the established trees continue to support the greatest number of species. The newly planted trees are now well established and producing blossoms, fruit and seeds and also providing a level of undergrowth for protection especially the areas in Grids F5 and F6. Since the 2010-11 report it is obvious, from the figures, that birds have moved from the existing trees to the new plantings, but they are highly likely to utilise both.

Cattle-grazing, which was re-introduced in July 2012, continues in most paddocks. This has changed the habitat from the long grass of the past couple of years to short grass areas and, except for the re-vegetated fenced area, the open spaces are now in a similar condition to when monitoring commenced in 2006.

Of interest was the reduction of the birds of prey species. From the Birds of Prey group, 8 species were observed over the wetlands in the last year, from a total of 19 for the site. As mentioned above, this species group can vary for a number of reasons; many are uncommon, nomadic and migratory, also considerable knowledge and skill is required to identify them, so species can either be misidentified or errors in identification can occur. Many of the birds of prey such as the Brown Falcon are birds of the open country so grazing may not have been a factor contributing to their absence. The birds that feed over water, such as the Brahminy Kite and Eastern Osprey, were all present during 2013.



Sacred Kingfisher - Hollands

Peaceful Dove - Hollands

Also of interest was the absence of three species in Group 31, Robins, Old World Warblers and White-eyes which would appear to coincide with the re-introduction of grazing. Three of the species in Group 31; Tawny Grassbird, Australian Reed-warbler and Golden-headed Cisticola, are dependent on long grasses and sedges for food, protection and nesting, and the first two are a nomadic or migratory species so the shortened grasses could be a cause contributing to their absence. These three species are more often heard than observed as they generally hide in long grass and reeds, and unless disturbed, are difficult to detect. The Australian Reed-warbler is migratory and the other two are sedentary, but all three species have only been recorded intermittently in the past.

Of the parrots, the Yellow-tailed Black Cockatoo and Australian King Parrot were not observed, and only occasional sightings of these two species have been recorded in the past.

**Note** - Except for waterbird and shorebird species, abundance of species was not counted until surveys in 2011 and not all surveys since have included count numbers. In the future, BBB will endeavour to count or estimate species numbers for every survey to better assess the habitat health.

#### 4.5.2 Discussion - Water Avifauna

There are four family groups of water avifauna species identified as utilising Vallances Road habitat and, as previously mentioned above, waterbirds refers to avifauna species that are generally associated with water. Vallances Road aquatic habitats are very different from Byron Wetlands which utilises settling ponds to treat water. At Vallances Road there are no settling ponds; all water from the STP is treated to the highest standard and then discharged into the brackish water at the north-east end of the oxbow. The water then flows through a stand of melaleucas for a short distance before entering the tidal waters of the Brunswick River. There are mangrove wetlands and salt marshes adjacent to the river as well as freshwater bodies and wetlands. All water avifauna species are likely to utilise all these areas at some stage, although the crakes and rails are less likely to stray from areas that are not protected by reeds and grasses.

Within these groups of waterbirds, below, two threatened species were recorded. This compares with 2010-11 when five threatened species were observed. The Brolga, Magpie Goose and the Australasian Bittern were not observed during 2013. Within these groups one threatened species, the Black-necked Stork will be discussed, **Discussion – 3.5.4 Threatened Avifauna.** 

From Table 9 the four waterbird groups are:

- Group 2 Swans, Geese, Ducks & Grebes Total for site = 7
- Group 6 Frigatebirds & Cormorants Total for site = 5
- Group 7 Heron, Ibis, Spoonbills & Allies Total for site = 14
- Group 10 Crakes, Rails and Gallinule Total for site = 5

A total of 23 waterbird species was recorded in 2013, differing from a total of 31 for the site, and is one less than in the previous report 2012. A number of the nomadic species which were recorded last year were not recorded this year e.g. the Chestnut Teal.

The extra area along the road which, in 2012, we recommended should be included in future counts, has a deeper freshwater pond (Grid C3) which will attract different waterbird species than the shallow brackish waters of the oxbow. The freshwater pond accounted for the Hardhead and Australasian Grebe, both diving birds, and the ponds are a habitat suitable for these two species. The freshwater ponds were not included in the original surveys, as the road was not opened for general access until 2012.

As noted in the 09-10 report, both ends of the fresh water oxbow were artificially restored to the original state in November 2008 so they could receive tidal waters from the Brunswick River. As a result of the salt water penetrating the oxbow, especially in the south- west end, the salt-intolerant reeds and grasses died. New mangrove growth is now penetrating well into both ends of the oxbow and, if allowed to continue, will alter the habitat for the birds currently inhabiting the site.

**Table 13** below provides comment for 2013 for all the waterbird species recorded on-site and provides comparisons with the past two survey periods. The variation in numbers and period of occupation would be considered normal for this group of waterbirds.

Name		Range		Comment for 2013
	2013	2012	2010-11	
Australian Wood Duck	4-6	0-18	0-80	Present each survey
Plumed Whistling Duck	0-11	0-200	0	Generally absent – recorded one survey in Sept both years
Grey Teal	1	0-20	0	Generally absent
Chestnut Teal	0	12	0	Absent
Pacific Black Duck	0-10	6-23	2-25	Mostly present
Hardhead	0-8	0	0-6	Present all surveys this year – recorded in pond at bottom of hill along tarred road – not surveyed in September
Australasian Grebe	0	0	0-1	Always present - uses fresh water pond
Australasian Darter	1-8	0-2	1- 75 OH	Observed all visits except for April survey
Name		Range		Comment for 2013
	2013	2012	2011	
Little Pied Cormorant	0-11	0-6	1-10	Usually numbers vary between 1-5 when present possibly nesting in west corner of F cell
Little Black Cormorant	2-11	0-12	1- 60	Observed most visits mainly on river
Pied Cormorant	0-1	0	0-1	Mostly absent - on river
Great Cormorant	0	0	0-1	Mostly absent
Pelican	0	0	0	Absent last recorded 5th May 2010
Black-necked Stork	0-2	?	0	Reported by staff - mostly absent
White-necked Heron	0-6	0-1	0-1	Mostly absent
Eastern Great Egret	0-2	0-2	0-1	Generally present river & oxbow
Intermediate Egret	0-2	0-4	0-1	Occasionally present - oxbow
Cattle Egret	0-150	4-80	Not counted	Present most surveys - with cattle
Striated Heron	0	0-1	0-1	Not observed since September 2012
White-faced Heron	0-2	2-4	2-4	Mostly present but absent for two surveys during 2013
Little Egret	0-1	0-1	0-1	Mostly absent
Nankeen Night Heron	0-1	0-3	0-2	Often present – thought to have nested 2012
Australian White Ibis	3-180	0-40	0-12	Always present
Australasian Bittern	0	0	Heard x 1	Absent
Straw-necked Ibis	0-57	0-20	0-2	Present most survey during 2013
Royal Spoonbill	1-8	0-8	0-8	Present all surveys during 2013
Pale-vented Bush-hen	0	0	0	Absent
Spotless Crake	0	0	1	Absent 1 x heard 2/2/2011
Buff-banded Rail	0-1	0-3	0-1	Occasional observation – secretive bird maybe present more frequently then observed
Purple Swamphen	4-12	0-12	0-9	Present all surveys during 2013
Dusky Moorhen	6-12	0-12	0-6	Present for 3 survey absent since July 2013

# Table 13 - Vallances Road Water Avifauna Population and Range

#### 4.5.3 Discussion - Shore Avifauna

Five waders or shorebirds were detected on-site. The four resident shorebirds, Red-kneed Dotterel, Black-fronted Dotterel, Black-winged Stilt and the Masked Lapwing were recorded during every survey for this reporting period. On the September survey two birds of the migrating Latham's Snipe were detected but, unusually, the species was not recorded during the November survey. The exposed mudflats of the oxbow are the preferred habitat for all the above five species although the Masked Lapwing is also commonly observed on pasture land and the Stilts will feed along the river at low tide. All five species are ground nesting birds and all are likely to nest on-site. As they are ground nesting and roosting species, the presence of foxes are a threat to all five of these shorebirds. The Latham's Snipe is protected by International Agreements, such as JAMBA, CAMBA and ROKAMBA Agreements with Japan, China and Korea.



Black-winged Stilts - Hollands

Species	Movement	2013	2012	2011	2009-10	2007-09	
Latham's Snipe	Migratory	0-2	0-3	1-4	0-1	0-1	Breeds in Japan
Black-winged Stilt	Nomadic	6-12	0 -12	0-2	0-2	0	Breeds in wet areas - Australia
Black-fronted Dotterel	Sedentary	6-26	0-27	0-22	0	0	Breeds in Australia
Red-kneed Dotterel	Nomadic	5-22	0-5	0	0	0	Breeds in Australia
Masked Lapwing	Sedentary	2-10	2-14	4-16	3-15	0-10	Breeds in Australia
Painted Snipe	Nomadic	0	0-2	0-5	0	0	Breeds in Australia
Common Sandpiper	Migratory	0	0	0	1	0	Breeds in high Arctic tundra
Total Species		5	6	5	4	2	

#### Table 14 - Vallances Road - Shore Avifauna Populations

#### 4.5.4 Discussion - Threatened Avifauna

This year three threatened species were observed at Vallances Road from a total of eight previously recorded for the site; **Table 15** provides discussion for each species and includes a list of threatened avifauna species observed since 2006.

	DATE	Lest			
	observed	Dasi			
SPECIES	this report	record	GRID	CS	COMMENTS 2013
<b>Black-necked Stork</b> Ephippiorhynchus asiaticus	20/3/2013	Possibly Sept 2012 ID uncertain	E3	E	As last year, Council staff reported to BBB an observation of a Black-necked Stork (BNS) visiting the site, although identification was uncertain. Staff said two birds were observed a week prior to BBB survey in March but were absent on the day of the survey. BBB received reports of two birds roosting in the saltmarsh in Brunswick, foraging in Marshalls Creek and along the Brunswick River during March and throughout the year It is highly likely all reports were of the same pair and it is possible they used Vallances Road site more frequently than one observation. A pair was also recorded at Byron Wetlands. The species is nomadic and disperses after the breeding season and is likely to visit again. A nesting site has never been recorded in Byron Shire
<b>Eastern Osprey</b> Pandion cristatus	14/07/13 23/11/13	23/1/13	F6	V	Observed on two surveys flying overhead along the river. Probably associated with the nesting pair that exists 500 m north of the Brunswick River Bridge. The nest site was destroyed during the adverse weather in February and March 2013. The presence of a juvenile along the river indicated they have created another nest site in the vicinity of the river but the exact location has not been identified.
Rose-crowned Fruit -Dove Ptilinopus regina	20/03/13 14/07/13	22/9/12	F5	V	One bird was heard calling somewhere along the river in grid F3 in March and one bird was heard and sighted in Grid E3 where there is still a presence of Camphor Laurels. In 2008 & 09 birds were frequently recorded in this grid(E3) but it appears the birds are not returning to the site.
Collared Kingfisher	-	29/6/11	?	V	Mark Fitzgerald - Observation of the species needs to be confirmed
Australian Painted Snipe	-	12/12/12	E3	Е	BBB
Masked Owl	-	28/12/11	C2	V	BBB
Pale-vented Bush-hen Amaurornis moluccana		23/12/2008	E7	V	Mark Fitzgerald

Table 15 - Vallances Road Threatened Avifauna

CS = Conservation Status



Rose-crowned Fruit-Dove - Hollands

Eastern Osprey - Pearse

# 5.0 Conclusion

As with previous reports the results continue to reveal a dynamic ecosystem at both sites and the data would seem to indicate that any variability is within reasonable tolerance. The outcomes from these surveys demonstrate that both sites continue to support a significant abundance of avifauna species, even though the habitats are somewhat different. Simply, Byron Wetlands has more freshwater bodies and therefore more water related avifauna. The data also demonstrates that nomadic and migratory species will use both sites, either as a short stopover, or as an end-stop on their migration. However, the habitat for shorebirds at West Byron could be improved to support a greater number of shorebirds for a longer duration during their migration or nomadic movement. (See Recommendations below).

A combined total of five threatened species were recorded this year, but having an overall total 9 threatened species, continues to demonstrates that they are a particularly important sites for biodiversity within the shire.

Byron Wetlands forms part of the Belongil Estuary system and BBB has records of an additional nine threatened avifauna species at the mouth of the Belongil Estuary. Combined, these two sites are significantly important and should be managed to protect and enhance the biodiversity values of the area. In this respect it is important to continue to manage the Byron Wetland site for waterbirds and shorebirds with careful attention to water levels, especially in Cell H being the one cell where specific conditions apply under the development application.

An increase of Torresian Crows and Indian Mynas has been observed on the new sportsfield, as urban environments are attractive to top predator avifauna such as crows and currawongs, this may have negative impacts on avifauna species of the wetlands. However, to determine the effects of the impacts more intense research maybe required.

The Byron Wetlands are an important human community amenity providing a "quiet place" and an opportunity for birdwatching and education for both the local population and tourists. The current level of visitation appears not to be impacting on the bird populations.

The effects of the development of the Ewingsdale Sportsfield and the Bayshore Village development on the wetlands are unknown, and every consideration should be given to ameliorating deleterious impacts, especially those arising from bright lighting, loud noise and illegal entry. Predation on the avifauna population, by both introduced and natural

species, may increase with urban expansion and some illegal entry is still occurring through an unfenced area in the south-east boundary.

Providing habitats that support avifauna population adds to biodiversity benefits and values to the advantage of the Shire through the provision of ecosystem services such as seed dispersal, pollination, insect and rodent control, scavenging and nutrient deposit. Avifauna are sensitive indicators of change in the environment and can provide early warnings of environmental problems, they also provide an economic service through nature-based tourism, and cultural heritage through art and stories.



White-breasted Woodswallows - Pearse

# 6.0 Recommendations

Continued monitoring of avifauna species is recommended on a regular basis in order to detect any changes and to contribute to the future management of both sites. This is the 5th report BBB has provided for avifauna species at both sites; we consider that the majority of bird species have been identified and, allowing for migratory and nomadic behaviour, the populations would appear to be stable. We therefore recommend another detailed report in three years. In the interim, BBB will continue to monitor the site and maintain Excel spreadsheet records of avifauna at both sites.

## **Byron Wetlands**

- Revegetation along the common boundary fence between the Wetlands and Ewingsdale sports complex with appropriate trees for the best control of light and noise pollution is recommended.
- As per the 2011 report we recommend the limited use of herbicide spaying and mowing of low vegetation at the edge of all cells. A number of avifauna utilise the edge vegetation for protection, especially the shy rails and crakes, and also the

migrating Latham's Snipe. Edge vegetation is also an important foraging habitat for scrub-wrens and fairy-wrens.

• Suitable habitat for migrating shorebirds is not being maintained adequately between September and April in Cell H. However, suitable muddy areas in other cells have been available for shorebirds. BBB recommends that alternative cells continue to be managed to supply an appropriate habitat for shorebirds if Cell H cannot be managed to provide a suitable habitat. As recommended in the 2010/11 report, maintaining an appropriate habitat will be important as increasing human populations and associated activities from the new West Byron Urban Release area, the Bayshore Village and North Beach developments, and possibly the new sports field, will almost certainly destroy the amenity for shorebirds at the mouth of the Belongil Estuary.



White-bellied Sea-Eagle - Hollands

Spotted Pardalote - Hollands

Variegated Wren - Hollands

- There appears to be a deterioration of the reeds in Cells E, I and J which maybe of concern for the health of the wetlands.
- If any expansion of the wetlands is proposed then, where possible within the operational plans requirements, we recommend that further shorebird areas should be created.
- In the 2010-11 report BBB recommended a review of documents associated with the management of the Byron Wetlands. There are at least five documents that BBB is aware of; West Byron "Cell H" Management Plan 2006, West Byron Sewage Treatment Plant Weed Management Strategy 2005, Byron Bay Intergrated Water Management Reserve Constructed Wetland Operational Environment Management Plan, West Byron Visitor Education and Impact Plan, and West Byron Monitoring and Impact Verification Plan with much replication and similar content. Even though we believe a review was being considered we are not aware that if it has been completed. BBB suggests, for future management and simplification, these plans could be condensed into one strategic plan and the background material presented in another document. In doing so the new plan could be made less complicated and be more relevant to the community, so meeting some of the objectives stated in the five documents. A review of the results of monitoring over the past 10 years is needed to drive new actions for the future management of the area, and also to take into consideration knowledge associated with the effects of climate change and future impacts from human population growth.

- Control of Foxes is recommended at both sites. BBB is aware of and supports the on-going fox control being conducted at Byron Wetlands, but fox control also needs to be implemented at Vallances Road.
- There continues to be a potential to improve visitor experience and, particularly, education at the Wetlands as a number of actions in the West Byron Visitor Education and Impact Plan have not been implemented. BBB members are committed to monitoring avifauna species, providing education and conducting one open day a year at the Byron Wetlands although currently we have limited capacity to continue conducting the open day for the public as we have in the past.
- The Interpretive Centre at the wetlands is a great resource. However, on BBB open days we are limited by the space available to seat more than 30 people. We recommend that Council investigate funding opportunities for changing this wetlands centre into a science hub, creating a larger space where community groups can come and learn about wetland science. A part-time education coordinator could also be funded as part of a biodiversity program.

## Vallances Road

• In the long term, an opportunity exists at Vallances Road for public visitation similar to the arrangements at West Byron and we suggest that this be studied and implemented where minimal disturbance to the birds can be achieved.

# 7.0 References:

The Slater Field Guide to Australian Birds - 2nd Edition - Peter, Raoul and Pat Slater The Field Guide to the Birds of Australia - Graham Pizzey and Frank Knight Shorebirds of Australia – Andrew Geering, Lindsay Agnew and Sandra Harding BirdLife Australia Bittern Fact Sheets and newsletters Simpson and Day Field Guide to the Birds of Australia - 6th Edition - Ken Simpson. Nicolas Day and Peter Trusler Michael Morcombe Field Guide to Australian Birds - New Edition Revised and Updated BirdLife Australia - Birds in Backyards website A Field Guide to Australian Birdsong CD (BOAC) The Michael Morcombe eGuide to Australian Birds - M. Morcombe and D. Stewart West Byron "Cell H" Management Plan 2006 West Byron Sewage Treatment Plant Weed Management Strategy 2005 Byron Bay Intergrated Water Management Reserve Constructed Wetland Operational Management Plan West Byron Visitor Education and Impact Plan West Byron Monitoring and Impact Verification Plan Systematics and Taxonomy of Australian Birds - Les Christidis and Walter E. Boles, 2008

# 8.0 BBB Activities and Education

BBB utilises the funds received from BSC, for monitoring the two sites and creating this report, for conservation and education of avifauna within Byron and surrounding Shires.

The list following, briefly describes the activities BBB members were involved with during 2013:-

- Conservation by working with a range of agencies and organisations, BBB works to achieve a broad and consistent range of conservation outcomes for shorebirds, waterbirds and bush birds across the north coast.
- Engages with NSW National Parks and Wildlife Service (NPWS), Byron Shire Council (BSC), Marine Parks Authority (MPA) on the protection and monitoring of shorebird breeding areas at the Belongil estuary.
- NSW NPWS, BSC on the management of dogs in shorebird breeding areas within National and Marine Parks especially at Marshalls Creek/North Wall of Brunswick River.
- NPWS on the temporary protection of the breeding area for the Beach Stone-curlew.
- BirdLife Australia Shorebirds 2020 projects coordinates shorebird monitoring at four sites in Byron Shire being Belongil Estuary, both south and north areas of the Brunswick River to just north of the bridge and Byron Wetlands. Results are up-loaded to the BirdLife Australia shorebird site and any shorebird results for Vallances Road are also uploaded.
- Regional Shorebird Group In 2010 BBB assisted NPWS with the formation of this group and in 2011 initiated, and jointly managed a program, with funding from BirdLife Australia to develop consistent signage on shorebird breeding and feeding areas on public land and in National Parks stretching from the Clarence River in the south to the Tweed River in the north.
- Community education BBB is committed to an ongoing community education program which seeks to educate the wider community about the beautiful birds which inhabit the Northern Rivers region as well as engaging people in conservation activities either in their own back yards or beyond.
- Website BBB continues to promote a range of environmental events and talks on our web and twitter site www.byronbirdbuddies.com.au.
- Guided bird walks and Public Talks BBB has led over 100 hours of free guided bird walks and talks during 2012/13. This provides an opportunity to promote biodiversity and conservation values for all fauna in the shire. The following is a sample of these:
  - \* BSC Biodiversity & Sustainability Workshop presentation "Birds in Backyards"
  - \* Wollongbar TAFE walk and presentation in Byron Wetlands
  - \* U3A Brunswick presentation
  - \* Byron Herb farm 20th Anniversary celebrations guided walk in Byron Wetlands
  - \* Ballina Girl Guides presentation
  - \* Uki Garden Club presentation
  - \* Envite HCV Coastal Corridor Enhancement
  - \* Hosted "My Year at the Broome Observatory" by Kath Southwall at the Byron Wetlands
  - \* Hosted: Drinks and Nibbles Byron Wetlands Bird Walk and Presentation x 3
  - \* Hosted: Wild about Birds Field Day held on 21st October 2012.
  - \* Big Scrub Rainforest Day talk

\* Schools education program: BBB has developed a bird education and sustainability program called "Wild about Birds" which aims to teach skills students of the far North Coast primary schools, skills which help them to identify and monitor the birds in their schoolyards, along the beaches and wetlands in our area.

# 9.0 Appendix:

- 1. BBB Byron Wetlands Excel Spreadsheet
- 2. BBB Birds of Byron Wetlands Avifauna Tick List
- 3. BBB Vallances Road Excel Spreadsheet
- 4. BBB Birds of Vallances Road Avifauna Tick List
- 5. BBB Byron Wetlands Information Sheet



**Glossy Ibis - Jones** 

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19 3 Crested Pigeon	Ocyphaps I.	lophotes	Pigeons and Doves	2	<u>с</u> ,			2 -	x			9	F4	2	2 B5	12 H	5	B5 3	B6	1 B6	2 B	×	D3 4	86 B	1 B6
20 3 Feacelul Dove 21 3 Bar-shouldered Dov	e Geonelia hi.	umeralis	rigeons and Doves Pigeons and Doves	2 0	2 4	B4	I	5 B		-	4	14	R4	9	5 B4	4	4 4	B4 2	B4	6 D2.B4		×	D3 13	65	3 S
22 3 Rose-crowned Fru	it-Dove Ptilinomus r	regina	Pigeons and Doves	MB-I		D2		2		•			5	, ,	5	-		1	5			<	2	3	3
23 4 White-throated Nee	dletail Hirundapus	s caudacutus	Frogmouth, Nightjar & Swift	MBE	HC			30															200	НО	
24 6 Australasian Darter	Anhinga no	waehollandiae	Frigatebirds Gannet, & Cormorants	z	3 8	D3,C3	_	1	4 3			2	D3,C4	1	2 D3,C4	2 D	3 1 D	03,C4 2	C4	3 D4,		Х	D4, 2	E3	2 E3
25 6 Little Pied Cormon	unt Microcarbo	o melanoleucos	Frigatebirds, Gannet & Cormorants	s	3	C3	_	6 C	4 1	X	5			3	3 B4	2 D	3	3	C4			Х	D3 11	E3	4 E3
26 6 Great Cormorant	Phalacroco	orax carbo	Frigatebirds, Gannet & Cormorants	z	3 3 3	D3	,	•			:				1 E3							X	D3		
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30 7 Black-necked Stor	k Ephippiorh	which as a static us	Heron. Ibis. Spoonbills & Allies	z	, e							-	5	iuv	5	1 *	2	 5	50		4	<	0	10	
31 7 White-necked Hero	n Ardea pacij	fica	Heron, Ibis, Spoonbills & Allies	z	3						-			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1 D3	-	3 1	D3 2	C4		- -	34 X	D3 2	C4	1 C4
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33 7 Intermediate Egret	Ardea inter.	rmedia	Heron, Ibis, Spoonbills & Allies	s	3	B4	9	5 B	4		2	3	B4	2	2 B4	- 3	4	5	B4	4 B4,D4	7 B	4 X	D3 3	B4	5 B4
34 7 Cattle Egret	Ardea ibis		Heron, Ibis, Spoonbills & Allies	s o	3 IS	8 2	,	280 AI	, L 3	X		20	DAEA	, 30	DA PA	10 E	4 0 1	B4 1	D4 E4	15 B4,E3,D2	2	с X	D3 2	D3	D4 E
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37 7 Nankeen Night Her	on Nycticorax	caledonicus	Heron, Ibis, Spoonbills & Allies	s	2 3	D4																	5	CS	1 C5
38 7 Glossy Ibis	Plegadis fa	dcinellus	Heron, Ibis, Spoonbills & Allies	Z	3 14	B4	22	1 E	4											_	3 D	3 X	D3		_
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Appendix 1 –Excel Spreadsheet Byron Wetlands 2013 pt.1

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Appendix 1-Excel Spreadsheet Byron Wetlands 2013 pt.3

Birds of West Buron Watlands -	Buron Bird Buddies - www.huronb	indbinddies com au Co8 az 51 E45	aper at the Site of Si	the soft of the second	5
Australian Brush-turkey	White-necked Heron	Black-fronted Dotterel	Sacred Kingfisher	White-browed Woodswallow	~00.00
Brown Quail	Eastern Great Egret	Red-kneed Dotterel	Rainbow Bee-eater	Grey Butcherbird	
Stubble Quail	Intermediate Egret	Masked Lapwing	Dollar-bird	Pied Butcherbird	
King Quail	Cattle Egret	Comb-crested Jacana*	Superb Fairy-wren	Australian Magpie	
Plumed Whistling-Duck	White-faced Heron	Latham's Snipe	Red-back Fairy-wren	Pied Currawong	
Wandering Whistling-Duck	Little Egret	Australian Painted Snipe*	Variegated Fairy-wren	Spangled Drongo	
Magpie Goose*	Nankeen Night Heron	Little Curlew	White-browed Scrubwren	Rufous Fantail	
Musk Duck	Glossy Ibis	Whimbrel	Large-billed Scrubwren	Grey Fantail	
Freckled Duck*	Australian White Ibis	Common Greenshank	Brown Gerygone	Willy Wagtail	
Black Swan	Straw-necked Ibis	Marsh Sandpiper	Mangrove Gerygone	Torresian Crow	
Australian Wood Duck	Royal Spoonbill	Wood Sandpiper	White-throated Gerygone	Leaden Flycatcher	
Pink-eared Duck	Yellow-billed Spoonbill	Red-necked Stint	Striated Thornbill	Satin Flycatcher	
Australasian Shoveler	Osprey	Pectoral Sandpiper	Yellow Thornbill	Restless Flycatcher	
Teal Grey	Black-shouldered Kite	Sharp-tailed Sandpiper	Brown Thornbill	Black-faced Monarch	
Chestnut Teal	Square-tailed Kite	Curlew Sandpiper	Striated Pardalote	Spectacle Monarch	
Northern Mallard	Pacific Baza	Whiskered Tern	Eastern Spinebill	Magpie-lark	
Pacific Black Duck	White-bellied Sea Eagle	Crested Tern	Lewin's Honeyeater	Red-capped Robin	
Hardhead	Whistling Kite	Silver Gull	Yellow-faced Honeyeater	Rose Robin	
Australasian Grebe	Brahminy Kite	Glossy Black Cockatoo*	Noisy Miner	Eastern Yellow Robin	
Hoary-headed Grebe	Brown Goshawk	Yellow-tailed Black Cockatoo	Little Wattlebird	Golden-headed Cisticola	
Rock Dove	Collared Sparrowhawk*	Galah	Red Wattlebird	Australian Reed-Warbler	
White-headed Pigeon	Grey Goshawk	Little Corella	Scarlet Honeyeater	Little Grassbird	
Spotted Turtle-Dove	Swamp Harrier	Sulphur-crested Cockatoo	Brown Honeyeater	Tawny Grassbird	
Brown Cuckoo-Dove	Wedge-tailed Eagle	Cockateil	White-cheeked Honeyeater	Rufous Songlark	
Emerald Dove	Little Eagle	Rainbow Lorikeets	Blue-faced Honeyeater	Silvereye	
Peaceful Dove	Nankeen Kestrel	Scaly-breasted Lorikeet	Noisy Friarbird	Welcome Swallow	
Bar-shouldered Dove	Brown Falcon	Crimson Rosella	Little Friarbird	Fairy Martin	
Wonga Pigeon	Australian Hobby	Eastern Rosella	Striped Honeyeater	Tree Martin	
Rose-crowned Fruit-dove*	Brolga*	Pheasant Coucal	Eastern Whipbird	Russet-tailed Thrush	
Topknot Pigeon	Purple Swamphen	Common Koel	Black-faced Cuckoo-shrike	Common Starling	
Tawny Frogmouth	Lewin's Rail	Channel-billed Cuckoo	White-bellied Cuckoo Shrike	Common Myna	
White-throated Needletail	Buff-banded Rail	Horsfield's Bronze-Cuckoo	Cicadabird	Mistletoebird	
Australasian Darter	Baillon's Crake	Shining Bronze-Cuckoo	White-winged Triller	Double-barred Finch	
Little Pied Cormorant	Australian Spotted Crake	Little Bronze-Cuckoo	Varied Triller	Red-browed Finch	
Great Cormorant	Spotless Crake	Pallid Cuckoo	Golden Whistler	Chestnut-breasted Mannikin	
Little Black Cormorant	Pale-vented Bush-hen*	Fantail Cuckoo	Rufous Whistler	House Sparrow	
Pied Cormorant	Black-tailed Native Hen	Brush Cuckoo	Little Shrike-thrush	Australian Pipit	
Australian Pelican	Dusky Moorhen	Southern Boobook	Grey Shrike-thrush	Eastern Yellow Wagtail	
Black-necked Stork*	Eurasian Coot	Eastern Grass Owl*	Australian Figbird		
Australasian Bittern*	Bush Stone-curlew*	Azure Kingfisher	Olive-backed Oriole		
Australasian Little Bittern	Black-winged Stilt	Laughing Kookaburra	White-breasted Woodswallow		
Black Bittern*	Greater Sand Plover*	Forest Kingfisher	Masked Woodswallow	up-dated 25/2/12	

# Appendix 2 - Byron Wetlands Avifauna Tick List

Key (0)	Vallances x=	<ul> <li>Road - Survey Sheet</li> <li>observed; h=heard; ff=flying f</li> </ul>	L Latitude S28'32,43.98 Longitude E153'30,52.4; veding: oh=Aying over n=nesting: br=breeding: c=chicks;	5 ; jv=juveni	le; n= not	t no ted, p	=site only	partially	observed,	All=thr	L ee areas c	or more						$\left  \right $	
Habitat (H) 1 = aquatic, 2 = f(	= aquatic, 2 = fo	orest or isolated	trees, $3 =$ freshwater wetlands, $3A =$ tidal wetlands, $4 = m$	nangroves,	5 = pastı	rre, 6 = p	antings,	/= estuari	ine, 8= reed	Is/long g	rasses						$\left  \right $		
Movement (M - Column F) S = Sedentary, N=	= Sedentary, N=	Nomadic, V=V	'agrant, E=Endemic, M=Migrant, MR=Migrant Raptor, N  MS=Migrant Shorebird (E after letters external migran	MW=Migr: at or I migr	ant Wate rates with	rbird, M iin Austr	B=Migra alia	at Bush bi	ird,			_							
Headings No= species numb	o= species numb	er, tax=no of fi	amily group, X= observed or counted, O= observation H=I	habitat, G	=map gri	d referen	ce, MF=	Mark Fitz	zgerald's O	bs for B:	SC, DC=]	David Ch	arley						
			Observer	М	Н	BBB &	BVBW		BBB			BBB & F	<b>SLNR</b>		BBB		BBI	3 & BVB	M
ned Species is highlighted -V=Vulnerable	le		Time	0 >	a b	8.00	13.00		14.00 - 1	9.00		07.30 -1	3.00	16	5.00 - 19.4	45	30	00-13.00	-
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			Year	<u>ں</u>		5(	13		2013	<i>_</i>		2013			2013		-	2013	
x Species Scientific Name Australian Brush-turkev Alectura lathami	ientific Name sctura lathami		Family Mound-Builders & Ouail	. ~	. ~	_	_	•	=	9	•	H	9	0	=	9	2	Н 2	G E3
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Grey Teal Anas gracilis	as gracilis		Swans, Geese, Ducks & Grebes	Z	3A									-	3A	E3			
Pacific Black Duck Anas supercitiosa	tas superciliosa		Swans, Geese, Ducks & Grebes	s z	3A	4 °	3 E3	، ج	•	D.3	، و ا	3A 2	B2 D2	-	3A	E3,34	2 r	V.	B2
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Spotted Dove Streptopelia chine	'eptopelia chinei	tsis	Pigeons and Doves	s	2						2	2	E3	2	2	E3	2	2	E4
Brown Cuckoo-Dove Macropygia ambo	acropygia ambo	inensis	Pigeons and Doves	z	2	_	E C	3	H	E4	2	H	23	2	H	E3,E5	2	H	E4
Peaceful Dove Geopetia striata	sopelia striata		Pigeons and Doves	2 0	2	7	2	4	=	E4,B	2 6	H	E4,B7	£	×	62	2	Ŧ	E4,B7
Bar-shouldered Dove Georadia humeral	spinups topnote spinups drimoral	ic	rigeous and Doves Digeons and Doves	a 00	• •	4	R2	4	, ,	R4.4	و م م	• •	F45	٢	,	R4.5	4	,	R45
Wonga Pigeon Leucosarcia picat	ucosarcia picat	a	Pigeons and Doves	n so	- 7				• =	FS	Ē	•	FS		•		,		2
Rose-crowned Fruit-Dove *V Ptilinopus regina	ilinopus regina	1.	Pigeons and Doves	MB	2	-	H F	9			-	2	ES						
Topknot Pigeon Lopholaimus ante	pholaimus ante	reticus	Pigeons and Doves	N	но	_					13	HO						_	
White-throated Needletail Hirundapus caud	irundapus caud	acutus	Frogmouth, Nightjar & Swift	MBE	HO	_	_		_	_							10	HO	ALL
Australian Owlet-nightjar Aegotheles crista	gotheles crista	tus	Frogmouth, Nightjar & Swift	s	2	_	_	2	H	E5				-	Н	ES			
Australasian Darter Anhinga novaeh	nhinga novaeho	ollandiae	Frigatebirds, Gannet & Cormorants	z	-	6		5	-	F5	5	-	FS	-	-	FS	-	-	F5
Little Pied Cormorant Microcarbo melt	icrocarbo mela	moleucos	Frigatebirds & Cormorants	so a		~	-	5	-	F5	- •		FS		•		,		
LIUIE Black Cormorant Phalacrocovary v	alacrocorax s	ucirostris	Frigatebras & Cornorants Frigatebras & Cornorants	0 v		_	3	Ŧ	+		7	-	ē	-	-	ся	7	-	5
Black-neck Stork Ephinpiorhynch	himiorhynch	us asiaticus	Heron. Ibis. Spoonbilk & Allies				- 0	t ei	╞										
White-necked Heron Ardea pacifica	dea pacifica		Heron, Ibis, Spoonbills & Allies	z	5		3	D3 3	HO	B6							2	H	B6
Eastern Great Egret Ardea modesta	dea modesta		Heron, Ibis, Spoonbills & Allies	s	3A	1 3	A E	4									2	VV V	E4
Intermediate Egret Ardea intermedi	dea intermedia	1	Heron, Ibis, Spoonbills & Allies	s s	5	24	E I	<u>च</u>		3				4		į	-	-	
Cattle Egret Ardea ibis White-faced Heron Egretic novereho	tlea ibis vetta novaeho	llandiae	Heron, Ibis, Spoonbills & Allies Heron This Snoonbills & Allies	x v	- -	00 4 		4 2(	HO	F6				8	s	£4	5 ¢	5	C3,E3
Little Earet Revetta outsitut	vetta oarzetta	animiae	Heron Ibis Spoonbills & Allies	2 Z	34			3 10	╞	Ļ							4 <del>-</del>		ES S
Nankeen Night-Heron Nycticorax caled	cticorax caled	onicus	Heron, Ibis, Spoonbills & Allies	: :	4		_	-	4	ES									3
Australian White Ibis Threskiornis mol	rreskiornis mol	ncca	Heron, Ibis, Spoonbills & Allies	s	5 1	8	5	4 5	5 3a	E4	50	За	E4	6	3a	ES	16	3a	E4
Straw-necked Ibis Threskiornis spin	veskiornis spir	<i>iicollis</i>	Heron, Ibis, Spoonbills & Allies	Z	5		0 * 0 *	1,3 57 1	7 5,oh	C3,E	5 20	5,oh	C3,E5	,	,	1	2	5	E2
Koyai Spoondill Flatatea regra Fastern Osnrev *V Pandin cristafi	atatea regta ndion cristatu	/* 3	Heron, rots, spoonbuils & Aures Rinds of Prev	0 x	VC HO	0 0	-	- +	n	3	4 -	° HO	2	7	°	E4	2 (	с НС	3
Black-shouldered Kite Elanus axillaris	anus axillaris		Birds of Prev	z	OH 3	*	0	7	╞		-	HO					í	1	
Pacific Baza Aviceda subcrisi	riceda subcrisi	tata	Birds of Prey	s	HO									-	2	ES			
White-bellied Sea-Eagle Haliaeetus leuc	diaeetus leuc	ogaster	Birds of Prey	s (	HO	2	H F	9			2	ю					1 (	HO	
Whistling Kite Haliastur sphen	aliastur sphen	sum	Birds of Prey	MR	HO	0 X	H		HO	ES	2*	HO	ES	-	HO	E4	5	HO	
Brahminy Kite Hattashur indus Brown Goshawik Accimitant facaitant	aliastur indus		Birds of Prey Birds of Drav	¢ dM	E E	-	2		7	3	7 -	7	3 3	-	7	C3	7 -	H H	
Wedge-tailed Eagle Amila anday	villa andar	2	Birds of Prev	v s	HO	, ,	-	, ,	╞	L	-	10	5					H	
· Buff-banded Rail Gallirallus philip	Alliral lus philip	pensis	Crakes, Rails & Gallinule	z	~									-	3A	E3		1	
Purple Swamphen Porphyrio porphi	nphyrio porph	vrio	Crakes and Rails	s	3A	4 3	A E	3 5	5 3A	E3	12	3A	E3	4	3A	E3	9	PA PA	E3
Dusky Moorhen Gallinula tenebr	ullimula tenebr-	osa	Crakes and Rails	s	3A	6 3	A E	3 2	3A	E3	2	3A	E3						
Black-winged Stilt Himantopus hime	mantopus hime	untopus	Shorebirds	z	3A	8	A	4	0 3A	E4	12	3A	E4	9	3A	E3,E4	10	V.	2
Black-fronted Dotterel Elseyornis melan	seyornis melan	sde	Shorebirds	20 J	34	2 - 2 - 2 -	4 ·	3 2(	6 3A	3 :	51 55	34	3	9	3A	E3	- 5	V.	3
Red-kneed Dotterel Erythrogonys cinci	ythrogonys cinci	SIL.	Shorebirds	z	5A	5	A V	4 ·	5 3A	51	2 <	9V 2	3	= `	3A	E3	2	v	3
Masked Lapwing Vanellus miles	mellus miles		Shorebirds	NCP	5A	0 2	A E3,	4, 6 H	0 3A	E3,4,	6 2	3A	E3,4, 6	• •	3A 0	E4, 6	4	V9	5,5
Calub Soupe Columnago narawic	Intrago narawic.	401 11.0	Shorebirds Conjectors B. Darmote	MSE	9V		2	v v	no	24	ŕ	aa	14	7 0	× 10	EJ		00	P.A.
T tule Country	nopmas rosercap	nn.	Contractions or Fairfuls	0 0	7	, ,	-	n t		3	1 -	NG 10	ŝ	7		E4	+ -	¥ E	2
Rubburgered Cockaton Canada anguinea	contua sangumea catua ar lovite		Cockatoos and Parrots Contrations and Darrots	 		-	-	4	╞		1 6	75 E	+	с С	HO	E4 EG.		H H	44 17
Deinhour Lookatoo Cockatoo Coccatua gaterita	icana galeria		Contained and Farrots	0	5 5	-	-	• •	10	1 2 2	7 1	5 5	PE 24	, ,		601 P.	, ,		10
Souly brandad Dilast Trichogrossus no	ichoglossus nu	lematouus Lovolonidotus	Codestrors and Derrots	a 0	5 2		_	< l		1'ea	2 0	5	+1*c3	+ c		EO,F4	* *		23
F ocary-breasted Lotikeet 17/08/08/08/08 5	icnogrossus c	morouepuaouus mine	Cockators and Farrots Cockators and Parrots	- 0 0	5	, ,	-				<i>,</i> ,	5	3	4	5	EO	7		ea
Phasent Coucal Control Control of	anycercus ena	taninus	Cockatoos and Failots	0 v	4 00	4	4	> 2	=	R3	4	4	2	-	=	БЗ			
Eastern Koel Eudvnamys orie	dvnamvs orie	ntalis	Cuckoos	MBE	2					3				2	=	E3E5			
Channel-billed Cuckoo Scythrops novae	vthrops novae	hollandiae	Cuckoos	MBE (	но												2 (	н	
: Shining Bronze-Cuckoo Chalcites lucid	nalcites lucid	sn	Cuck oos	MB	2						4	Н	E3	1	2	E3			
Ean-tailed Cuckoo Cocomantis flab	comantis flab	elliformis	Cuckoos	MB	2		F	5			2	Η	F5						
Brush Cuckoo Cacomantis varie	comantis varie	olosus	Cuckoos	MB	6									2	9	E5	2	2	F5
Southern Boobook Ninox novaeseela	nox novaeseela	ndiae	Owls	s	2									-	Н	E5	-		
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# Appendix 3 – Excel Spreadsheet Vallances Road 2013 pt.1

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63	17	Azure Kingfisher C	Ceyx azureas	Kingfishers, Roller & Bee-eater	s	2	-	F5				2	1	F4	T	1	2	-	ES	Т
5	5	Laughing Kookaburra	Jacelo novaeguineae	Kingfishers, Roller & Bee-eater	<u>s</u>	5	2	5	×	2	E4	7	BR	E	-	2	5	BR	2	Т
65	1	Forest Kingfisher 7	odiramphus macleayii	Kingfishers, Roller & Bee-eater	MB	-	2	ES				2	2	ES			7	7	ES	Т
99	5	Sacred Kingfisher	odiramphus sanctus	Kingfishers, Roller & Bee-eater	MB				×;	- •	F5	- `	- •	F5	<del>ر</del> ا		2 7	- •	F5	T
67		Kainbow Bee-eater	Aerops ornatus	Kingfishers, Koller & Bee-eater	MBE				×	2	64	9	2	53	- 12	7	4 2	, ,	51	1
80	1	Dollarbird A	curystomus ortentaits	Kinglishers, Koller & Bee-eater	MBE											7	4 12	7	W	1
60	2	Noisy Pitta	illa versicotor	Fittas, I recerceper	MB								`		-	•	q			Т
0/12	20	Kegent Bowerbird 5 Sumerh Fairv-wren 4	iericulus chrysocephatus Aahurus cvaneus	Bowerbirds Fairv-Wrens	MB S				v	~	F4.5 F5	ۍ 4	9	E3 F4.5 F5	2	6 F	4	9	F4.5 F4	1
72	50	Red-backed Fairv-wren	dalurus melanocenhalus	Fairy-Wrens	- v	×	9	ES	•	,		9	4	E4	,	>	, ,	,	E4.	
73	20	Variegated Fairy-wren M	Aalurus lamberti	Fairy-Wrens	s	×	9	F5				8	9	F5	F	F	5	×	FS	1
74	21	White-browed Scrubwren S.	ericornis frontalis	Scrubwrens, Allies & Pardolote	S	X S	8	E3	2	9	E5	2	9	F5	3	6 1	5			
75	21	Large-billed Scrubwren S.	iericornis magnirostra	Scrubwrens, Allies & Pardolote	s							1	6	F5						
76	21	Mangrove Gerygone C	Jerygone levigaster	Scrubwrens, Allies & Pardolote	s	-						2	4	F4		1	2	4	E3	
17	21	White-throated Gerygone	Terygone albogularis	Scrubwrens, Allies & Pardolote	MB	×	2	E3	;	`	1	2	9	E5	4,	9	5 2	2	E3	T
20	17	Thermostic Theorem The	canthiza nana	Scrubwrens, Allies & Pardolole Scrubwrene Allies & Bardolole	20	, ,	ŕ	F 2.4	<	• •	E3 5	-	ç	E3 6	4	0 0	10	4	E3 6	T
80	17	Brown Inoundum Snotted Pardalote	canniza pusuta Pardalotus nunctatus	scrubwrens, Antes & Fardolote Scrubwrens Allies & Pardolote	MB	4	4	2°C-1	<	4	e'ea	4 6	4	с;сл Р5	ľ	t	2	•	cica	T
818	21	Striated Pardalote P	ardalotus striatus	Scrubwrens, Allies & Pardolote	MB	4	9	ES	X	9	E5	4	9	ES	-	6 1	4	9	ES	Т
82	22	Lewin's Honeyeater	Aeliphaga lewinii	Honeyeaters	S	8	9	E3,F	5 X	9	ALL	2	9	E3	4	6 1	34 8	9	ALL	1
83	22	Yellow-faced Honeyeater L	ichenostomus chrysops	Honeyeaters	MB				х	2	C7,E3	15	2	C7,E3						
84	22	Noisy Miner	Aanorina melanocephala	Honeyeaters	s	4	2	5	×	2	E6	2	2	E6		-	4	2	E6	T
28	77	Scarlet Honeyeater	dyzometa sangunotenta	Honeyeaters	MIB S	•	0 4	E4,F	< > 0	7 6	ALL	9	7	ALL	<i>o</i> ,	7	4 F 4			T
87	77	White cheeked Honeveater P	chemera maismeta Philidomeris ni aar	ruuryvatets Huneveaters	MB	2 t	9	53	<	7	3	0	7	3	7	•	,E.0			T
88	22	Blue-faced Honeveater E	Intomvzon cvanotis	Honeveaters	s	· ·	7	E3				2	2	F3	ſ	r				1
68	22	Noisy Friarbird P	<sup>2</sup> hilemon corniculatus	Honeyeaters	MB	9	9	III	×	2	C7,E5	4	2	C7,E5	2	6 C7	.E5			T
60	23	Eastern Whipbird	<sup>2</sup> sophodes olivaceus	Quail-thrush & Allies	s	2	9	D7	-	н	E6	2	Н	E6	3	H	9			
16	24	Black-faced Cuckoo-shrike C	Coracina novaehollandiae	Cuckoo-shrikes & Triller	s	2	2	E5				9	2	E5	1	2 I	3 2	2	E4	
92	24	Cicadabird	Coracina tenuirostris	Cuckoo-shrikes & Triller	MB	5	2	E6						Ì	2	2	5 2	2	E3	T
93	24	Vaned Triller	alage leucomela	Cuckoo-shrikes & Triller	z	- `	2 \	ES	•	,	-	4.	2	E4	t	t				T
94	3 2	Dolden Winstler	acnycepnata pectoratis	Whistlers, S-thrush, Figbird & Orioles	MB	4	•	3 5	7 (	7 6	10	4 (	o ,	51 52	T	T	•	,	20.00	1
\$	9 2	Kulous Whistler	achycephala rufiwentris	whistlers, S-thrush, Figbird & Orioles	MIS o	4 -	•	3 3	7	7	C/,E5	7	7	CI,ES	,		۲ c	7	SI,12	1
0/	9 X	Grave Shrike-utrush	ouuncincia megarnynciau Vollunisincla harmonisa	Whistlers, S-urtush, Figbird & Orioles Whistlers S-thrush Fichied & Orioles	• •		7 9	63 28				ç	۶	74	°	•	2 r	o 4	+ 2	1
86	35	Australasian Fiobird	Inherotheres vieillati	Whistlers S-thrush Fightid & Orioles			, ,	53				30	2	ALL.	2	2	4	2.6	53	T
66	25	Olive-backed Oriole C	Driolus sagittatus	Whistlers. S-thrush, Figbird & Orioles	MB							2	9				5	2	E4	T
100	26	Masked Woodswallow A	tramus personatus	Woodswallows	N 0	н							NEEDS	CONFIR	DNING	F	-	но	ES	
101	27	Grey Butcherbird	Cracticus torquatus	Magpies, Butcherbird & Currawong	N							2	2	E3	2	2 H	3 2	2	E3	
102	27	Pied Butcherbird	Cracticus nigrogularis	Magpies, Butcherbird & Currawong	s	2	2	E5	2	2	D6	2	2	D6	3	2 H	2 2	2	D6	1
103	27	Australian Magpie C	Cracticus tibicen	Magpies, Butcherbird & Currawong	s	4	3	D2	×	5	ES	9	5	E5	5	5	3 2	ŝ	ES	T
104	51	Pied Currawong	trepera graculina	Magpies, Butcherbird & Currawong	2	5	2	TIV	×	2	ALL	3	2	ALL	2	2	4	2	ES	
105	27	Spangled Drongo	Dicrums bracteatus	Magpies, Butcherbird & Currawong	MBE	2 0	0	F6							2	9	2	2	E6	T
107	07 80	Grow Fantau Grow Fantail	Anpiaura ruggrons Atinidura albiscana	Fantau Fantai	MB	7 7	• •	6 2	30	•	U.V.	50	,	UV	y	2 E6	16	•	Ν	T
108	28	Willy Wantail	Alinidura lanconhrus	Fantail		• •	, c	F4	4	1 V	E4	4	a v	F4	, c	1 2	P P	1 V	F.4	Т
109	29	Torresian Crow	Orvus ornu	Crows	• <b>•</b> •	10	5	VII	×	5	ALL	4	HO	ALL	۰ ۳	2 E	4,5 12	6	VIL	1
110	30	Leaden Flycatcher A	Ayiagra nubecula	Flycatcher & Monarchs	MB	X	2	F5				1	9	E5	2	6 E6	,Е5			1
111	30	Restless Flycatcher	Ayiagra inquieta	Flycatcher & Monarchs	MB	-	2	F4	1	2	E5									
112	30	Magpie-lark C	Grallina cyanoleuca	Flycatcher & Monarchs	3 3	- V	3а	E3,4,	5 2	За	E3	4	3а	E3	2	3a I	2	3а	E3	T
115	50	Spectacled Monarch	ymposiarchus trivirgatus	Flycatcher & Monarchs	MB				;	•			,		-	9	9			Т
115	31	Kose Kobin Eastarn Vallow Bohin	etroica rosea Tone altreia austradice	Robins & Old World Warblers & White-eyes Dobine & Old World Warblers White-eyes	MB S	-	4	72	×	4	E4	4	4 6	E4 F3 E6	y	- -	х 4	y	23.22	T
116	31	Silvereve Z	costerons lateralis	Robins & Old World Warblers. White-eves	MB	12	0	E				2	6	E3.F5	~ ~	. 9	3 20	6.2	VLL	T
117	32	Welcome Swallow h	Jirundo neoxena	Swallows & Martins	MB 0	H 4	ю		7	HO	F4	4	но	F4	-	HO HO	4 4	Ю	F4	I
118	33	Mistletoebird	Dicaeum hirundinaceum	Thrushes, Starling, Myna & Flowerpecker	N	2	2	F5				-	2	E5						
119	33	Common Myna 5	turnus tristis	Thrushes, Starling, Myna, Flowerpecker	s I		1							1	-	5	33		1	T
120	34	Red-browed Finch A	veochmia temporalis	Finch, Mannikin & Sparrow	×	•	×	E4,5,1	9	×	E4,5,	7	*	E4,5,	ľ	ľ	×	~	E4,5,	
		Observation Details Total no of Snacias				28			55			85		I	89	t	47			
		Total thou of operates				° 7			4			3 4			9 5	t	t 4			T
	L	Total waterbird species				19			13	L		13			=	F	18			T
		Total threatened species				9			5			7			5		9			
		No of observers				15			3			15			3		4			1
		Tide & Weather						_	ļ				50 J.		Ī	0.04		-		
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		Tide during survey					o.u			hidh			oc.i		hiah &	1.37		o.u		1
	L	Wind Direction					N			SW			sw			nnw	L	s		Т
		Wind Speed					0-5ki	ms		5-10kn	-		5-10km		-0	5KM		15-20	cms	
		General Weather					Warm &	Sunny	ļ	Not recor	ded	2	ot record	pa	WARN	A & FINE	ł	Warm &	Sunny	1
		Dore				•			•			-		ľ	•	İ	4			
		People moving/fishing				observer	rs only		• •			•			3	t	observers	onlv		T
	L	Vehicle movement (boat,car)				1 bo	at	_	•			, o			4	T	0	^		Т
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9	Birds of Vallances	Road - Byron Bird Buddies - www.byron	ibirdbuddies.com.au	<b>\$</b>
Australian Brush-turkey	Brahminy Kite	Rainbow Bee-eater	Grey Butcherbird	Notes
Brown Quail	Swamp Harrier	Dollarbird	Pied Butcherbird	
Australian Wood Duck	Brown Goshawk	Noisy Pitta	Australian Magpie	
Pacific Black Duck	Grey Goshawk	White-throated Treecreeper	Pied Currawong	
Hardhead	<b>Collared Sparrowhawk</b>	Satin Bowerbird	Spangled Drongo	
Australasian Grebe	Wedge-tailed Eagle	Regent Bowerbird	Rufous Fantail	
White-headed Pigeon	Little Eagle	Superb Fairy-wren	Grey Fantail	
Spotted Turtle-Dove	Brown Falcon	Red-back Fairy-wren	Willy Wagtail	
Brown Cuckoo-Dove	Australian Hobby	Variegated Fairy-wren	Torresian Crow	
Emerald Dove	Pale-vented Bush-hen	White-browed Scrubwren	Leaden Flycatcher	
Peaceful Dove	Spotless Crake	Large-billed Scrubwren	Restless Flycatcher	
Crested Pigeon	Buff-banded Rail	Mangrove Gerygone	Magpie Lark	
Bar-shouldered Dove	Purple Swamphen	White-throated Gerygone	Black-faced Monarch	
Wonga Pigeon	Dusky Moorhen	Brown Gerygone	Spectacle Monarch	
Rose-crowned Fruit-Dove *V	Latham's Snipe	Yellow Thornbill	Rose Robin	
Topknot Pigeon	Common Sandpiper	Brown Thornbill	Eastern Yellow Robin	
Tawny Frogmouth	Black-winged Stilt	Spotted Pardalote	Clamorous Reed-warbler	
Australian Owlet-nightjar	<b>Black-fronted Dotterel</b>	Striated Pardalote	Tawny Grassbird	
Australasian Darter	Masked Lapwing	Striped Honeyeater	Golden-headed Cisticola	
Little Pied Cormorant	Yellow-tailed Black Cockatoo	Noisy Friarbird	Silvereye	
Little Black Cormorant	Galah	Blue-faced Honeyeater	Welcome Swallow	
Pied Cormorant	Little Corella	Noisy Miner	Tree Martin	
Great Cormorant	Sulphur-crested Cockatoo	Little Wattlebird	Fairy Martin	
Australian Pelican	Rainbow Lorikeets	Lewin's Honeyeater	Mistletoebird	
White-faced Heron	Scaly-breasted Lorikeet	Yellow-faced Honeyeater	Common Myna	
Little Egret	Australian King-parrot	Brown Honeyeater	Red-browed Finch	
White-necked Heron	Eastern Rosella	White-cheeked Honeyeater	Richard's Pipit	
Eastern Great Egret	Pheasant Coucal	Eastern Spinebill		
Intermediate Egret	Common Koel	Scarlet Honeyeater		
Cattle Egret	Channel-billed Cuckoo	Eastern Whipbird		
Straited Heron	Shining Bronze-cuckoo	Black-faced Cuckoo-shrike		
Nankeen Night Heron	Fan-tail Cuckoo	Cicadabird		
Australian White Ibis	Brush Cuckoo	Varied Triller		
Australasian Bittern	Southern Boobook	Australian Figbird		
Straw-necked Ibis	Barn Owl	Olive-back Oriole		
Royal Spoonbill	Masked Owl	Golden Whistler		
Eastern Osprey *V	Azure Kingfisher	Rufous Whistler		
Black-shouldered Kite	Laughing Kookaburra	Little Shrike-thrush		
Pacific Baza	Forest Kingfisher	Grey Shrike-thrush		
White-bellied Sea Eagle	Collared Kingfisher*V	White-breasted Woodswallow		
Whistling Kite	Sacred Kingfisher	Masked Woodswallow		
			up-dated 25/2/12	

# Appendix 4 - Vallances Road Avifauna Tick List

#### **Appendix 5 - Byron Wetlands Information Sheet**

pg. 1

# Information Sheet Birds of the North Coast Wetlands





Check out the video Why I love Birds at www.bvronbirdbud dies.com.au or on youtube.

It's a combination of famous writings about birds and the birds of West Byron Wetlands

## Life in the Wetlands

Wetlands are areas of improvina land where water cov- the water ers the soil – all year or quality just at certain times of passing the year. They can be through a natural or constructed series of (artificial, and include: cells prior swamps, lakes, billabongs, la-lease saltmarshes, from the aoons, coral reefs

marshes, to its re-

mudflats, mangroves, sewage treatment plant tain a wide diversity of life, West Byron Wetlands, plants and many con-tween land and water.



West Byron Wetlands is a constructed waste water wetlands consisting of 5 settling ponds or cells. H cell above has a large hide to enable unobtrusive viewing of bird behaviour.

into the Belongil Estuary, supporting plants and anibogs, fens, peatlands an important feeding mals that are found noand even underground ground for shorebirds in where else. At West Byron wetlands. Wetlands are this area. The natural and Vallance's Road a critical part of our wetlands at Vallance's alone, BBB has recorded natural environment. Road releases high over 230 species of birds. They protect our shores quality water back- Many wetlands are also from wave action, re- through a billabong areas of great natural duce the impacts of and into the Brunswick beauty, are important to floods, absorb pollut- River. Wetlands provide Aboriginal people and ants and as with the habitat for animals and provide a vital link be-



Nankeen Night Heron.

#### Endangered Birds Recover at the West Byron Wetlands

in fact walking on floating able breeding habitat safety.

One of the success stories plants. It's habitat has and food source such as inof the West Byron Wetlands been eroded by the intro-sects, aquatic plants and has been in the creation of duction of cattle into wet- seeds all year round. Once habitat for the Comb- land areas and by preda- they've found their place, crested Jacana, a threat- tion by foxes. Constructed these birds rarely come ened species in NSW. Of- wetlands such as West ashore. If danger threatens, ten known as the Lotus or Byron help reduce the the male has a habit of pick-Jesus bird because it ap- decline of these birds by ing up the chicks under his pears to walk on water, it is providing a range of suit- wing and caring them off to



# **Birds of North Coast Wetlands**



Waterbirds is a loose (not scientific) term for birds which are associated with water and includes herons, brolga's, terns, ducks, rails, swans and cormorants. Some are migratory or nomadic but most are resident birds. Shorebirds also inhabit wetlands. Their appearance can be directly linked to the water level in a wetland. When the conditions are right and the water-levels are low with exposed mud flats, shorebirds will appear and then disappear once the exposed areas are completely covered. Shorebirds prefer exposed areas with moist substrates, a rich food supply and clear surroundings to view an approaching predator. There are some exceptions. Latham's Snipe hides at the edges of freshwater bodies' in short tussocky grass and sedges, the Masked Lapwing utilised grassy areas and the Comb-crested Jacana uses lily pads.



Black-fronted Dotterels

Intermediate Egret

Black Swan and cygnets



Plumed Whistling-Ducks

Australasian Darter

Whistling Kite



Sharp-tailed Sandpipers

Purple Swamphen

Black-necked Stork



**Royal Spoonbills** 

White-necked Herons

Black-winged Stilts

Bird photography by Deb Pearce. Swan family by Michael Bingham. Photo of West Byron Wetlands by Isabel Borrelli. Production by Isabel Borrelli—Byron Bird Buddies. February 2012.