

# Chowilla Floodplain Bush Bird Surveys 2015-16

## Report



Helga Kieskamp, July 2016

This publication may be cited as:

Kieskamp, H. (2016) Chowilla Floodplain Bushbird Survey 2015-16

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## **ACKNOWLEDGEMENTS**

This project was funded by The Living Murray initiative of the Murray-Darling Basin Authority. The Living Murray is a joint initiative funded by the New South Wales, Victorian, South Australian, Australian Capital Territory and Commonwealth governments, coordinated by the Murray–Darling Basin Authority.

Cover image: Grey Fantail (H. Kieskamp).

All photographs in this document by the author.

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## Introduction and background

The Chowilla Floodplain is on the Murray River and covers 17,781 ha, mostly in South Australia with 26% extending into New South Wales. See figures 1 and 2. It was listed as a Wetland of International Significance under the 1987 Ramsar Convention and is one of six icon sites under the Murray Darling Basin Authority's Living Murray program, one of Australia's largest river restoration programs.

The ecological health of the Chowilla Floodplain has severely declined due to the reduction in flood frequencies and the impacts of highly saline groundwater. This has resulted in loss of long-lived vegetation, increased soil salinity and decreased breeding opportunities for floodplain fauna.

Under The Living Murray a program of works is being developed and implemented at the icon site to make sure that environmental water is used to maximise ecological benefits for the Chowilla floodplain.

The Chowilla Floodplain has long been recognised as an important bird area, with high avian diversity and some species present not found easily elsewhere in the state, attributable to a high habitat diversity and low level disturbance.

This report presents outcomes of a bush bird surveys conducted across the Chowilla Floodplain in spring, autumn and winter of 2015-16. This was preceded by a baseline bird survey in October 2011, four seasonal surveys per year during 2012-2014.

These surveys were undertaken as part of The Living Murray condition monitoring program for the Chowilla Floodplain Icon site to assess the benefits of environmental watering and other management actions in meeting the ecological objectives for the icon site.

This report describes the outcome of the survey.

The data, together with previously collected bird data, provides a snapshot of the status of the bird diversity in Chowilla, which will inform ongoing management of the Icon Site.



Chowilla Creek

# Map and location of the Chowilla Floodplain

Fig. 1 Map of the Chowilla Floodplain

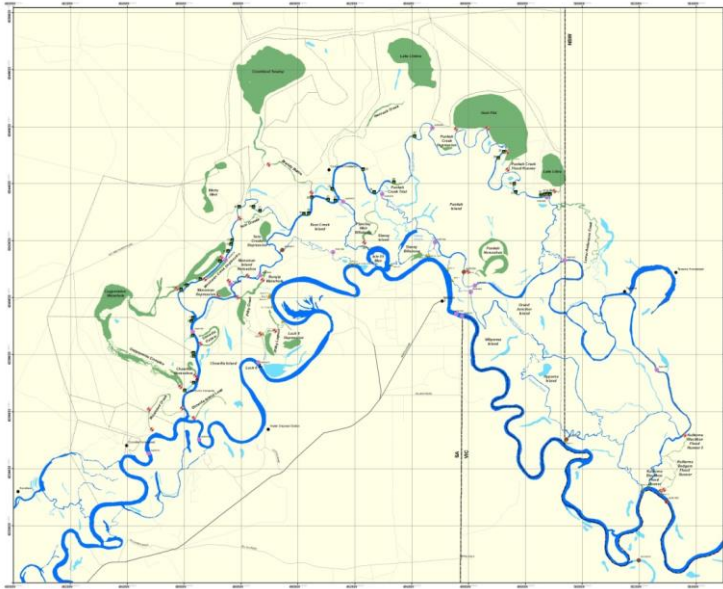
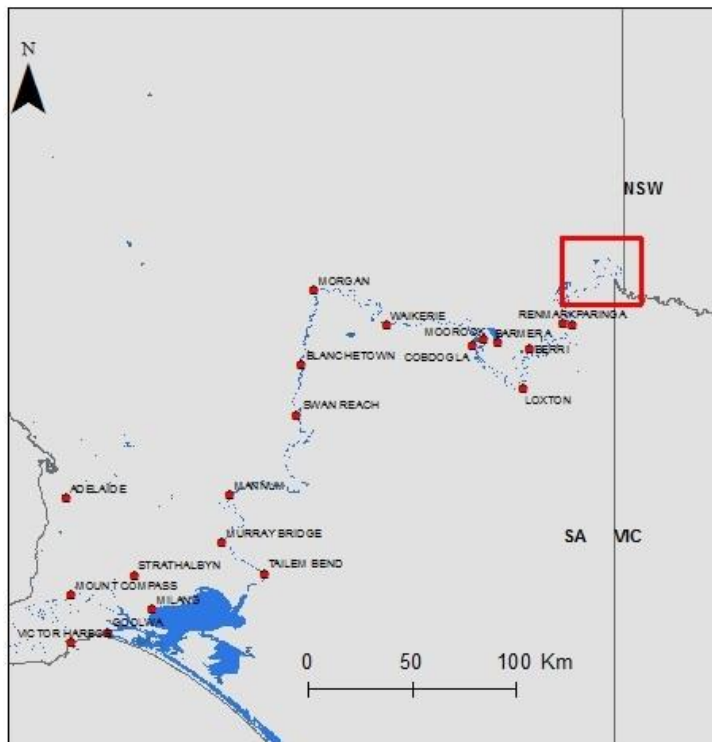


Fig. 2 Location of the Chowilla Floodplain



## Ecological objectives and targets

The ecological objectives and preliminary targets for the Chowilla Floodplain Icon Site are presented in the table below. The preliminary targets presented here may be refined pending the outcomes of the independent review of the Icon Site Condition Monitoring Plans.

Table 1. Ecological Objectives and Targets relevant to bush birds at the Icon Site

Ecological objective	Ecological target
Maintain or improve the diversity and abundance of key bird species	1. Each of the bird species known to historically utilise Chowilla will be recorded at $\geq 3$ sites in any three year period
Maintain the current abundance and distribution of Regent Parrots	2. Maintain the relative abundance (detection) of threatened bird species
Maintain the current abundance and distribution of the Bush Stone-curlew	



Crested Bellbird, more common in the mallee, was heard in the vicinity of Coombool Swamp.

## Assessments methods

Eight sites were visited for the survey targeting terrestrial (or “bush”) birds. Three of these sites were in River Red Gum woodland and five in Black Box woodland habitat. The locations are presented in Figure 3 and Table 2. The program was initiated during 2011-12 after it was deferred in 2010-11 due to access issues with high flows. The surveys were then repeated over a number of seasons during 2012-14 and again in 2015 -16.

Although it is primarily a bush bird survey, waterbirds found utilising the fringes of the sites were also recorded.

At each of the eight locations, 2 x 5 ha transects were assessed. Each transect is located on opposite sides of a reference point identifying the survey location. The 5 ha transects are 500 x 100 m, except location 1 where the vegetation is wide enough to allow 2 approximately circular 5 ha areas to be searched on either side of the waypoint. Transect surveys comprised a 30 minute species census.

All birds seen or heard within the transect were recorded. Each transect was assessed twice in the morning and twice in the afternoon. The order in which sites were surveyed was alternated to avoid detection bias associated with the time of day.

A copy of the data sheet is shown in Figure 4.



This Brown Treecreeper was seen at Werta Wert (site 2).



## Map of survey sites



Fig. 3 Map of the surveyed sites

## Details of site locations and assessment times

Table 2. Details of site locations for bush birds at the Icon Site

	<b>Easting</b>	<b>Northing</b>	<b>Habitat type</b>
1	485272	6239571	Black Box woodland
3	490425	6249445	Black Box woodland
4	498847	6246940	Black Box woodland
5	499660	6245737	Black Box woodland
6	488744	6240144	Black Box woodland
2	487765	6244235	River Red Gum woodland
7	490179	6238572	River Red Gum woodland
8	489696	6240901	River Red Gum woodland

Table 3. Sites visited during bush bird surveys

Site	Easting	Northing	Oct '11	Dec '12	Feb '13	Apr '13	Jun '13	Sep '13	Dec '13	Mar '14	Jun '14
1	485272	6239571	•	•	•	•	•	•	•	•	•
2	487765	6244235	•	•	•	•	•	•	•	•	•
3	490425	6249445	•	•	•	•	•	•	•	•	•
4	498847	6246940	•	•	•	•	•	•	•	•	•
5	499660	6245737	•	•	•	•	•	•	•	•	•
6	488744	6240144	•	•	•	•	•	•	•	•	•
7	490179	6238572	•	•	•	•	•	•	•	•	•
8	489696	6240901	•	•	•	•	•	•	•	•	•

Table 3. Sites visited during bush bird surveys (continued)

Site	Easting	Northing	May '15	Aug '15	Nov '15	Apr '16	Jun '16
1	485272	6239571	•	•	•	•	•
2	487765	6244235	•	•	•	•	•
3	490425	6249445	•	•	•	•	•
4	498847	6246940	•	•	•	•	•
5	499660	6245737	•	•	•	•	•
6	488744	6240144	•	•	•	•	•
7	490179	6238572	•	•	•	•	•
8	489696	6240901	•	•	•	•	•



## **Chowilla's bush bird communities**

At the Chowilla Floodplain a rich bird diversity can be found, largely due to a high diversity in habitat and a lack of disturbance. In a survey conducted in 1988, 170 species (both bush birds and waterbirds) were found. A number of these were classed as rare, endangered or vulnerable, highlighting the conservation significance of Chowilla.

The survey sites for this survey are found in two kinds of habitats, River Red Gum (*Eucalyptus camaldulensis*) woodland and Black Box (*Eucalyptus largiflorens*) woodland. They each have their own bird communities but both these habitats depend on periodic inundation for their survival.

### **Black Box woodland**

As Black Box woodland is found in between the riverine and the lower lying floodplain habitats (such as Lignum and River Red Gum) and drier Mallee habitats, it supports bird life of both these communities. Diversity therefore can be high in this habitat. However most of the vegetation at the survey sites in Black Box woodland areas was moderately degraded due to high salinity, prolonged drought, lack of flooding and past grazing pressure, keeping species diversity below that of the surveyed River Red Gum sites.

Black Box woodland holds high numbers of ground foraging and hollow nesting species. Therefore introduced species have the potential to seriously affect the avifauna in this habitat which includes the vulnerable Bush Stone-curlew.

Species commonly encountered in Black Box woodland include Grey Butcherbird, Southern White-face, Weebill, Chestnut-rumped Thornbill, Crested Pigeon and Yellow-throated Miner.

### **River Red Gum woodland**

The River Red Gum woodland provides important habitat to canopy feeders. Many species found here are more commonly found in higher rainfall areas. Examples of these are Grey Fantail, Superb Fairy-wren, and Little Friarbird. Further decline of floodplain habitat could see these species disappearing from our region. Deterioration of the health of older River Red Gum would also impact on the endangered Regent Parrot as they depend on mature River Red Gum trees for nesting hollows.

Species frequently encountered in the River Red Gum woodlands are Weebill, White-plumed Honeyeater, Willy Wagtail, Australian Magpie and Crimson Rosella.



**Table 4. Species observed during the Spring 2015 survey**

Count of Number Row Labels	transect								Grand Total
	1	2	3	4	5	6	7	8	
Apostlebird		1						1	2
Australian Darter								1	1
Australian Magpie	1	2	1	3	2		2	2	13
Australian Raven	3	4	5	3	3	4	3	3	28
Australian Reed-warbler							1		1
Australian White Ibis							1		1
Australian Wood Duck							1		1
Black-faced Cuckoo-shrike			1	1		2	1	1	6
Blue Bonnet	4		1	3					8
Blue-faced Honeyeater		1					1		2
Brown Falcon				1					1
Brown Treecreeper		1						1	2
Chestnut-crowned Babbler	3								3
Chestnut-rumped Thornbill	3		2	2	2	3		4	16
Crested Bellbird				1					1
Crested Pigeon	2		2	2	3	2	1		12
Crimson Rosella	1	1				1	2	3	8
Dusky Woodswallow							1		1
Emu		1			1		1		3
Galah		1							1
Gilbert's Whistler							2		2
Grey Butcherbird	4	1	2	3	4	2	2	3	21
Grey Shrike-thrush		2			2	1	4	3	12
Grey Teal							1		1
Hooded Robin						1			1
Horsfield-bronze Cuckoo							1	1	2
Inland Thornbill			1						1
Laughing Kookaburra							1	2	3
Little Corella							1	1	2
Little Friarbird		1				2	2	2	7
Little Raven	1	1	2			2			6
Magpie-lark	2	4	3			1	2	1	13
Mistletoebird								1	1
Noisy Miner		3					4	1	8
Pacific Black Duck							2		2
Peaceful Dove		3				1	1	3	8
Pied Butcherbird			2			2		1	5
Rainbow Bee-eater		2			1				3
Red Wattlebird								1	1
Red-backed Kingfisher			2						2
Red-capped Robin								2	2
Red-necked Avocets		1							1
Red-rumped Parrot		2				1	4	1	8
Restless Flycatcher		4					1		5
Ringneck Parrot	2	1	2	2	2	2			11
Rufous Whistler				1			2	4	7
Singing Honeyeater				2	1				3
Southern Whiteface	1			2	2	1			6
Spiny-cheeked Honeyeater	1			1	2	2	2	2	10
Striated Pardalote		4	1	1		2	3	3	14

Striped Honeyeater					3	4	1	2	10
Sulphur-crested Cockatoo							1	5	6
Superb Fairy-wren					2	1		3	6
Tree Martin		1							1
Variiegated Fairy-wren	1					1		2	4
Weebill	4	3	4	4	4	4	3	4	30
Welcome Swallow		1				1			2
Western Gerygone								3	3
Whistling Kite		2	1	1		2		2	8
White-backed Swallow			1						1
White-breasted Woodswallow		1							1
White-browed Babbler					1			2	3
White-plumed Honeyeater		4			3	2	3	3	15
Willy Wagtail		3	1		2	3	2	2	13
Yellow Thornbill								1	1
Yellow-billed Spoonbill							1		1
Yellow-rumped Thornbill	2					2			4
Yellow-throated Miner	4	1	4	4	2	3			18
(blank)									
<b>Grand Total</b>	<b>39</b>	<b>57</b>	<b>38</b>	<b>37</b>	<b>42</b>	<b>55</b>	<b>61</b>	<b>77</b>	<b>406</b>

### Number of species per habitat type

Transect	1	2	3	4	5	6	7	8	all	
Habitat	BB	RRG	BB	BB	BB	BB	RRG	RRG		
Number of species	17	29	19	18	19	28	34	36		68

BB – Black Box, RRG – River Red Gum

**Table 5. Species observed during the Autumn 2015 survey**

Count of Number Row Labels	transect								Grand Total
	1	2	3	4	5	6	7	8	
Australian Magpie	2	2	4	4	1	1	2		16
Australian Owllet-Nightjar					1				1
Australian Pelican							2		2
Australian Raven	3	2	1	3	3	5	4	1	22
Australian White Ibis							1		1
Australian Wood Duck							2		2
Black-faced Cuckoo-shrike			1						1
Blue Bonnet	3			2		1			6
Blue-faced Honeyeater			3				2		5
Brown Treecreeper			2						2
Chestnut-rumped Thornbill	3			3	3	2		4	15
Crested Pigeon			1	2	2	1			6
Crimson Rosella			3				2	2	7
Dusky Woodswallow							1		1
Emu			2		1		1		4
Grey Butcherbird	4	4	4	2	3	4	5	4	30
Grey Fantail			1		1	1		3	7
Grey Shrike-thrush			2			1	1	1	5
Grey Teal							2		2

Laughing Kookaburra								2		2
Little Raven	1							1		2
Magpie-lark		5					1	3	2	11
Mistletoebird		4		1	1			5	4	15
Mulga Parrot				1	1					2
Noisy Miner		5						3	1	9
Peaceful Dove		1								1
Peregrine Falcon								1		1
Pied Butcherbird	1		1	1			1		2	6
Red-capped Robin				1	2		1		3	7
Red-rumped Parrot		3				1	3	2		9
Regent Parrot	1									1
Restless Flycatcher		3								3
Ringneck Parrot	2	4	2	2	1					11
Rufous Whistler		1				1		1	2	5
Silvereyes									1	1
Singing Honeyeater			1			3				4
Southern Whiteface					1					1
Spiny-cheeked Honeyeater	1	2	1	2	3	1	1	2		13
Spotted Pardalote	1	1				1				3
Striated Pardalote		4	1			1		3	4	13
Striped Honeyeater		1		1	2	1	1	4		10
Sulphur-crested Cockatoo									2	2
Superb Fairy-wren						3			1	4
Tawny Frogmouth						1				1
Tree Martin		1						1		2
Variigated Fairy-wren	2					1				3
Wedge-tailed Eagle	2									2
Weebill	5	4	5	5	5	6	1	4		35
Welcome Swallow		1								1
Western Gerygone									1	1
Whistling Kite								1	2	3
White-backed Swallow						1				1
White-breasted Woodswallow	1									1
White-browed Babbler						3			1	4
White-faced Heron								1		1
White-plumed Honeyeater		5				3		3	4	15
White-winged Fairy-wren			2							2
Willy Wagtail	1	3		1	2	1	1	1		10
Yellow Thornbill									3	3
Yellow-billed Spoonbill								1		1
Yellow-rumped Thornbill				1						1
Yellow-throated Miner	4		4	4	2	4	2			20
(blank)										
<b>Grand Total</b>	<b>37</b>	<b>70</b>	<b>27</b>	<b>38</b>	<b>54</b>	<b>36</b>	<b>57</b>	<b>59</b>		<b>378</b>

### Number of species in each habitat type

Transect	1	2	3	4	5	6	7	8		all
Habitat	BB	RRG	BB	BB	BB	BB	RRG	RRG		
Number of species	17	27	12	19	29	18	29	25		62

BB – Black Box, RRG – River Red Gum

**Table 6. Species observed during the Winter 2015 survey**

Count of Number Row Labels	transect								Grand Total
	1	2	3	4	5	6	7	8	
Australian Magpie	2	2	3	3	4	3	1	2	20
Australian Pelican							1		1
Australian Raven	4	3	4	4	3	3	1	2	24
Australian Ringneck	2					2			4
Australian Shelduck							2		2
Australian White Ibis							1		1
Australian Wood Duck							1		1
Black-winged Stilt						1			1
Blue Bonnet	2		2						4
Blue-faced Honeyeater						1			1
Brown Treecreeper		1							1
Caspian Tern						1			1
Chestnut-rumped Thornbill	4			3	1	2	2	4	16
Common Bronzewing				1					1
Crested Bellbird			1						1
Crested Pigeon	1				2	1	1	1	6
Crimson Rosella		1				1	1	3	6
Emu	1			1					2
Gilbert's Whistler							1		1
Great Cormorant							1		1
Grey Butcherbird	3	2	3	2	3	3	2		18
Grey Fantail			2		1	1	1	3	8
Grey Shrike-thrush		2	3		2	1		1	9
Grey Teal							1		1
Laughing Kookaburra		2					1		3
Little Pied Cormorant						1			1
Little Raven	4		1	1					6
Magpie-lark		4	2	1	1	2	3		13
Masked Lapwing						1			1
Mistletoebird		4					2	3	9
Mulga Parrot					1				1
Noisy Miner		4					3		7
Pacific Black Duck							1		1
Peaceful Dove							1		1
Pied Butcherbird			2				1	1	4
Red-capped Robin			1			1		2	4
Red-rumped Parrot		4			3				7
Redthroat	2								2
Restless Flycatcher						1	1		2
Rufous Whistler		2						3	5
Silvereye								1	1
Singing Honeyeater				2	1				3
Southern Whiteface	3		1	2	1				7
Spiny-cheeked Honeyeater	1	2			2		1	1	7
Spotted Pardalote								1	1
Striated Pardalote	3	3	1	1		3	1	3	15
Striped Honeyeater					2	4	1	2	9



Sulphur-crested Cockatoo									2	2
Superb Fairy-wren				2				1	2	5
Tree Martin		2						1		3
Variiegated Fairy-wren	1		1							2
Wedge-tailed Eagle					1					1
Weebill	4	3	4	4	4	3	2	4		28
Welcome Swallow				2		1	1			4
Western Gerygone								1		1
Whistling Kite				1			2			3
White-browed Babbler					2			1		3
White-plumed Honeyeater		4			4	1	3	2		14
White-winged Chough							1			1
White-winged Fairy- wren	1		1							2
Willy Wagtail		2						1		3
Yellow Thornbill							1	2		3
Yellow-billed Spoonbill							1			1
Yellow-rumped Thornbill	1			1						2
Yellow-throated Miner	4		4	4		2				14
(blank)										
<b>Grand Total</b>	<b>43</b>	<b>47</b>	<b>36</b>	<b>33</b>	<b>40</b>	<b>40</b>	<b>48</b>	<b>46</b>		<b>333</b>

#### Number of species in each habitat type

Transect	1	2	3	4	5	6	7	8	all
Habitat	BB	RRG	BB	BB	BB	BB	RRG	RRG	
Number of species	18	18	17	16	19	23	35	23	65

BB – Black Box, RRG – River Red Gum

## Threatened species

Four threatened bird species are recorded for the Chowilla Floodplain. These are:

- Regent Parrot
- Freckled Duck
- White-bellied Sea-eagle
- Bush Stone-curlew

None of these were encountered during this survey. Although the absence of these species may be explained by many factors, the following considerations should be taken into account.

- Regent Parrots frequents Chowilla in small numbers mainly in spring and summer, as it utilises the hollows in mature River Red Gums for nesting. One Regent Parrot was recorded during the Autumn survey in 2015-16. Some active nest hollows were also found close by on the river during the recent survey undertaken by the Regent Parrot Recovery Team.
- Freckled Ducks are very nomadic and their presence here is often a response to conditions inland, not necessarily a reflection on conditions on the Chowilla Floodplain. Also, most wetlands in Chowilla are currently dry or now too shallow for Freckled Ducks to feed on.
- Only a couple of White-bellied Sea-eagle pairs are present in inland South Australia and they have large territories. The sightings in previous survey years which included those of a first year bird most likely indicated that they had bred nearby. They may not have bred this year or bred elsewhere.
- To detect the very cryptic and nocturnal Bush Stone-curlew a specifically designed survey carried out during the night using call play-back is needed. It is undertaken annually by volunteers of the Friends of Riverland Park, detecting this species in small numbers.



Left to right: Regent Parrot, White-bellied Sea-eagle, Freckled Duck, Bush Stone-curlew

## General impression and interesting sightings

### Spring

Although not rare or highly unusual, the following sightings may be of interest.

Both Yellow and Inland Thornbill were seen during the survey, both uncommon in Chowilla and the Riverland. Crested Bellbird was heard singing in a few places. This species is much more common in the dry mallee than on the floodplain.

Large numbers of Australian Ravens and Whistling Kite were feasting on dead carp at Werta Wert wetland. A pair of Red-backed Kingfishers was found to be nesting in a hollow in the sandy banks at Coombool Swamp. It is the only site known to the observer in Chowilla for this species.

Grey Butcherbird, Masked Lapwing and Ringneck Parrot were some of the species observed that had dependent young with them.

### Autumn

Bird-wise, the Chowilla floodplain seemed fairly quiet this survey period. The lack of rain in recent months but also the season (being autumn), are the most likely reasons. In certain areas signs of overgrazing by high kangaroo numbers were also visible, which over time can also affect bird numbers and bird diversity.

Yellow Thornbill and the resident pair of Western Gerygone were again present at Devils Elbow (site 8), a very healthy section of River Red Gum. Both species are uncommon in Chowilla and the Riverland.

A Peregrine Falcon was seen flying over site 6, a Black Box area located 1.5 km west of Pilby Creek. This is only the second record for this species in the 4 years of surveying. (The first record being at Werta Wert (site 2), dated 9/2/13.)

### Winter

As often during the winter survey, some recent rain had produced a fine ground cover, resulting in Chowilla looking green on the surface. However more substantial rain is needed to maintain the long-lived vegetation's health. Bird-activity was satisfactory and up from the rather quiet last survey in autumn.

As noted before, the following species were clearly present in lower numbers than in the past, with Chestnut-crowned Babbler not observed at all for the first time since 2012.

- Southern White-face
- Blue Bonnet
- Chestnut-crowned Babbler
- Fairy-wren species
- Brown Treecreeper

Other species were present in pleasing numbers, for example; Striped Honeyeater, Grey Butcherbird and Mistletoe bird.

Yellow Thornbill was seen in 2 sites this season (at site 8 at Devil's Elbow and nearby at site 7 at Pilby Creek) and the resident pair of Western Gerygone were also again present at Devils Elbow, a very healthy section of River Red Gum. Both species are uncommon in Chowilla and the Riverland.

A Crested Bellbird was heard in the distance while surveying site 3 (Coombool Swamp). This species is more often observed in the dry mallee away from the river and has only been recorded twice since 2012 during these surveys.



Chestnut-crowned Babbler numbers are decreasing.

## Recommendations and conclusions

This report and the following data analysis provide a valuable snapshot of the status of the birds of Chowilla Floodplain. The data can also be added to the existing data to form a larger more reliable dataset.

It is recommended that the surveys will continue to be repeated seasonally over a number of years to enable development of a more robust database to enable refinement of the expected species list and improve assessment of ecological target 1 : *Each of the bird species known to historically utilise Chowilla will be recorded at  $\geq 3$  sites in any three year period.*



Black Box habitat at Coombool Swamp (site 3).

## References

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