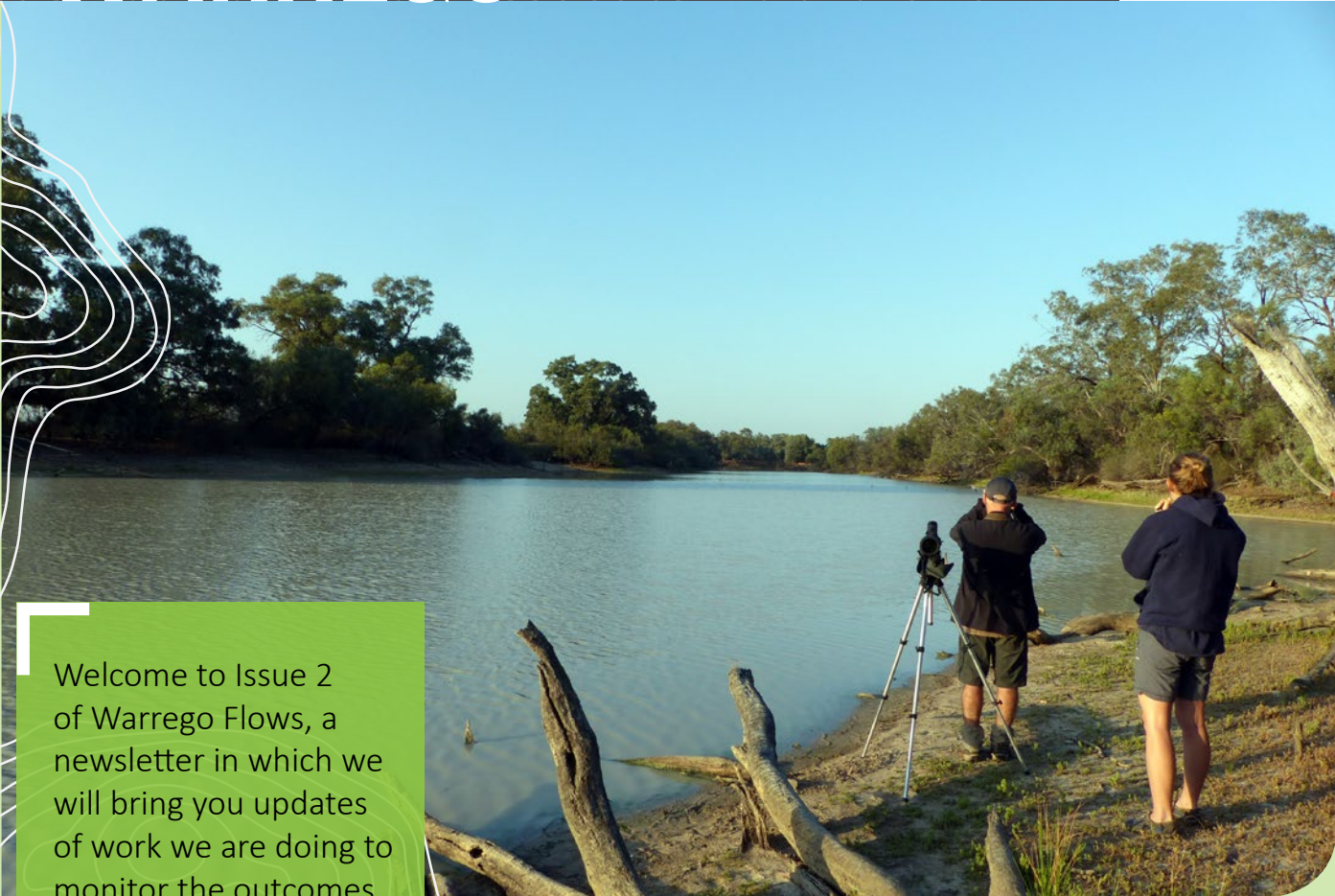


# WARREGO FLOWS



Welcome to Issue 2 of Warrego Flows, a newsletter in which we will bring you updates of work we are doing to monitor the outcomes of Commonwealth environmental water management in the Warrego-Darling Selected Area, as part of the Commonwealth Environmental Water Office’s Long Term Intervention Monitoring (LTIM) Project. In this issue we would like to share outcomes from waterbird monitoring.

Little is known about the waterbird communities in our monitoring area despite the potential for the waterholes on the Warrego River and Western Floodplain to provide refuge for waterbirds at a regional scale during dry periods. Our monitoring seeks to find out how environmental water contributes to waterbird survival, populations and species richness.



White-bellied sea-eagle

During the 2014-2015 monitoring period we recorded 86 bird species, of which 31 species were waterbirds.



Pelicans at the Darling River



Pied cormorant at the Darling River

In amongst the waterbirds was one species listed under JAMBA and CAMBA – the eastern great egret, and two species listed as threatened under the NSW Threatened Species Conservation Act – the brolga and the freckled duck. Waterbird abundance and richness were higher in summer (February 2015) than they were in autumn (May 2015).

Commonwealth environmental water management decisions made during 2015, resulted in water flowing onto the Western Floodplain during February, inundating around 37 ha. The floodplain waterhole we surveyed displayed higher numbers and species count of waterbirds compared to Warrego channel sites. It is likely that these floodplain areas, along with Boera Dam which also showed high waterbird numbers and species count, are important for waterbird communities within the Selected Area. This ties in with an increase in the number of zooplankton, frogs and other species on the Western Floodplain in the same period, suggesting that sending water onto the Western Floodplain stimulated food webs that saw an increase in productivity all the way up the food chain.

Since May 2015 bird numbers and species count have declined through the October (2015) and March (2016) monitoring periods; more so on the Western Floodplain than at the Warrego channel sites. During the 2015-16 monitoring period, water flowed onto the Western Floodplain between July – August and during December. Water levels in Boera Dam were lowest in October and February resulting in the drying of the floodplain and the disconnection of Warrego channel dams. Our monitoring shows that waterbirds have retreated to the dam and billabong areas on the river channels, which appear to be acting as refuges in these drier times.

## Did waterbird breeding occur?

**Yes it did!** Waterbird breeding was observed during the February 2015 monitoring period, in the Warrego channel sites. Courting, broods and/or nests of Australasian darter, black-fronted dotterel, royal spoonbill and freckled duck were observed. The black-fronted dotterel was also observed breeding during the October 2015 monitoring period, and two juvenile sacred kingfisher were observed during the March 2016 monitoring period.



White-necked heron at the Darling River

## What's all this about?

Japan-Australia Migratory Bird Agreement – JAMBA

China-Australia Migratory Bird Agreement - CAMBA

Republic of Korea-Australia Migratory Bird Agreement – ROKAMBA

These agreements aim to conserve migratory birds in the East Asia – Australasian Flyway. The first to be entered into was JAMBA in 1974, followed by CAMBA in 1986 and most recently the Republic of Korea in 2007. These agreements provide for the protection and conservation of migratory birds and their important habitats, protection from take or trade, the exchange of information and building cooperative relationships.



Brolga taking flight

## Brolga

### Species profile:

One of Australia's largest flying birds, this species stands 1.3 m tall and has a wingspan of nearly 2.5 m. It was once found across most of the continent and while abundant in the northern tropics, is very sparse across the southern part of its range. It is thought they mate for life with pair bonds strengthened during elaborate courtship displays. They are dependent on wetlands, especially shallow swamps, where they forage with their head entirely submerged. They feed using their bill as a crowbar to probe the ground or turn it over, primarily on sedge roots and tubers. They will also feed on large insects, crustaceans, molluscs and frogs.

## Eastern great egret

### Species profile:

This CAMBA and JAMBA listed species is widespread in southern and eastern Asia and Australasia, with breeding populations distributed throughout. They occur throughout much of Australia with most of the breeding colonies in near-coastal regions of the Top End of the Northern Territory. Other, smaller, breeding colonies are scattered throughout Australia. This species undertakes some regular seasonal movements, mostly to and from breeding colonies, and towards the coast in the dry season. Movements of up to 280 km have been recorded within Australia, as well as movement between Australia and New Zealand, and regular passage across the Torres Strait.

This species has been recorded in a diverse range of wetland habitats and has a diverse diet that includes fish, insects, crustaceans, molluscs, frogs, lizards, snakes and small birds and mammals.

## Common sandpiper

### Species profile:

This species flies to Australia all the way from Russia after they finish breeding during the northern hemisphere summer months. This species has a wide global distribution and is found on all continents except America. They face no serious threats and are the most adaptable and widespread of shorebirds – perhaps because they have a broad and varied diet. For a small bird with a wingspan of up to 41 cm and a weight range of 33 – 84 g; their 10, 000 km migration is quite impressive!



This Common sandpiper was spotted at Boera Dam

## Darren Ryder

**PROJECT DIRECTOR** Warrego -Darling and Gwydir river system Selected Areas



### Describe your role:

Jack of all trades. I am involved in overall LTIM project management, reporting and communication, and coordinate the water quality, plankton and waterbug foodwebs, and river and wetland productivity components of the program.

### What does a regular day on the LTIM Project look like?

There is such a diversity of tasks and opportunities within the LTIM projects that there is no such thing as a regular day. Fieldwork to collect water samples and capture waterbugs and fish, installing equipment, entering and analyzing data, managing project activities and reporting, and talking to landowners are all possible. But not all in one day.

### What's your most memorable LTIM Project moment so far?

The Warrego and Darling Rivers provides an adventure playground for freshwater scientists. Watching the western floodplain change from dry soil to a wetland teeming with plants, waterbugs, frogs and fish just by adding water was very cool.

### What do you wish other people knew about the LTIM Project?

That the project team live and work in rural and regional areas, and want to see the science used for the wise use of water so that both the river environment and regional communities can prosper.

## Dan McKenzie

**ECOLOGIST**



### Describe your role:

Ecologist conducting systematic bird and frog surveys at established locations while assisting others with water and micro-invertebrate sampling and data collection.

### What does a regular day on the LTIM Project look like?

Waking up early, conducting bird surveys documenting both species and numbers observed, deploying aquatic data loggers and collecting water and micro-invertebrate samples. Frog surveys are conducted at last light and during the night. Also lots and lots of driving and idle chatter with colleagues, and stopping at some great locations to have a sandwich between monitoring locations.

### What's your most memorable LTIM Project moment so far?

Several moments stand out as memorable. These are: watching Brolgas fly in to the Warrego floodplain. The view at sunset from Mount Talowla look out and experiencing sudden heavy rainfall and slipping and sliding while driving all the way back to the former irrigator's quarters from Boera Dam.

### What do you wish other people knew about the LTIM Project?

Everyone involved has so much passion for what we're doing. There are very few projects like this conducted at such a scale and its great to be involved with something so positive.



Department of Primary Industries



Commonwealth Environmental Water Office