



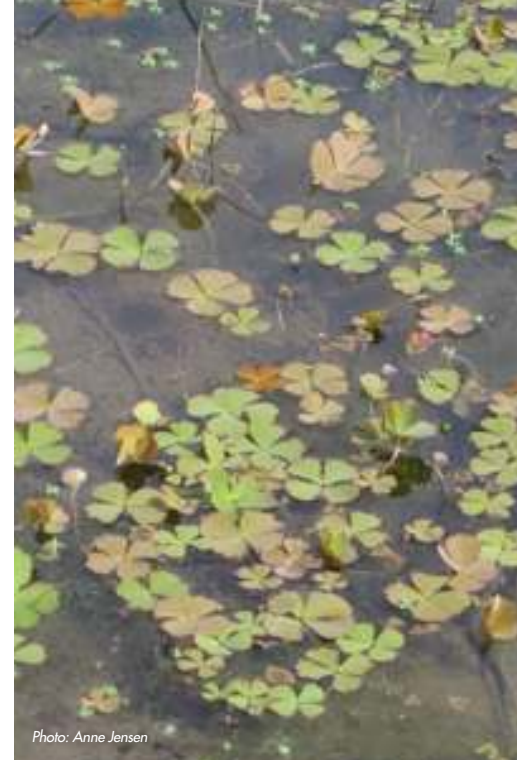
Water for Native Animals Part 2

Let's take a dip below the water's surface. Do you remember catching yabbies or tadpoles as a kid? Ever watched a turtle sunning himself, or heard a chorus of frogs on a summer's evening? Areas of the River Murray have been in a state of decline and need our help to restore their health. Together we can make our wetlands and floodplains healthy enough again so that these creatures can survive.

This factsheet forms part of the [My Healthy River Toolkit](#) which provides information to interested wetland owners, community people, and organisations about what environmental watering is and how you can help to improve the health of our river. The Toolkit is an initiative of [Nature Foundation SA's Water For Nature](#) program.

Commonwealth environmental water is recovered by the Australian Government under the [Basin Plan](#). Water For Nature supports community-driven watering projects along the South Australian River Murray at wetland and floodplain sites that are not receiving water from other sources.

We are a non-government organisation and have worked with the Commonwealth Environmental Water Office, the South Australian Government, irrigators, local councils, community groups, and landholders, to deliver 6.22 gigalitres (that's 6.22 billion litres!) to 80 sites in the SA River Murray valley... **but there are many more sites that need water.**



Environmental water refers to
“water used to improve the health of our rivers, floodplains and wetlands”

Why do we need environmental watering?

Regulation of the river system (see [Factsheet #1](#)) has reduced the resilience of the river and its wetlands and floodplains to withstand drought and has disrupted breeding cycles for aquatic animals.

Environmental watering can provide a buffer in dry years to sustain vegetation and young animals through stressful conditions. The aim is to mimic the natural cycle of wetting and drying which occurred before river flows were regulated.

The Water For Nature program has a number of target native aquatic animals that it helps, including native fish, macroinvertebrates and frogs. But other animals also benefit from our watering activities including turtles, yabbies, and insects like dragonflies.



Do you know a site that needs a “watering” hand?

Water For Nature can help you or your group with environmental watering projects by:

- identifying what needs watering and when (including trees, waterbirds, frogs, turtles and fish);
- government approvals to deliver environmental water;
- accessing an environmental water allocation;
- lending you pumps and equipment; and
- advice on how to tell if it's working.



DRAGON FLIES & FROGS ARE THE FIRST RESPONDERS TO WATERING!



Photo: Matt Turner

Native fishes

Native fishes evolved to cope with the variable flows of the Murray River, breeding in large numbers in floodplain wetlands when floods allowed and developing survival strategies for drought and low flow conditions. However regulation of the river has resulted in the decline of many fish species, due to:

- fewer floods which degrade wetland breeding sites and limit access from the River;
- weirs, which prevent upstream migration by certain species to access wetland breeding sites; and
- introduced fish species which thrive in the regulated River system.

There are a number of actions being taken to help our native fishes, such as:

- environmental watering programs which help to protect wetland breeding sites and aquatic links between these sites and the River, and manage the impacts of invasive fish;
- installation of fish ladders (or fishways) at weirs along the length of major rivers in the Basin; and
- a Murray Cod breeding program in the Lower Darling.

More information on our native fishes is available from [Natural Resources SA Murray-Darling Basin](#).



Photo: Australian Museum



Photo: James Donaldson

Did you know?

Our native callop, or golden perch, (*Macquaria ambigua*) are known to travel over 2,000km to access breeding sites!

Frogs

Our native frogs are amazing animals and are a great indicator of healthy water systems. Nearly a quarter of Australia's 217 frog species occur in the Murray-Darling Basin, including threatened species such as the Southern bell frog (*Litoria raniformis*). Water plays a crucial role in all stages of frog life cycles, from tadpoles to breeding adult frogs. Threats to our frogs include: the draining of wetlands and swamps, the loss of water-plants, the re-channelling of streams, polluted run-off, and predation by native and introduced animals.

Frogs are very quick to respond to environmental watering and can raise quite a chorus on the floodplain! To learn more about our amazing frog species, visit [FrogWatch SA](#) or check out this [poster](#) by the Murray-Darling Basin Authority.



Photo: Callie Nicolai



Photo: Will Miles

Turtles

Three turtle species live in South Australia's River Murray:

- Murray short-necked turtle (*Emydura macquarii*): abundant and common in open waters of lagoons and the River;
- Eastern long-necked turtle (*Chelodina longicollis*): smallest of the three species and most widespread, found in any body of freshwater, including farm dams and temporary wetlands; and
- broad-shelled turtle (*Chelodina expansa*): largest and least common of the three species and lives only in permanent, deep water.

All three species lay their eggs on land where they are at risk of predation from a variety of animals including foxes, water rats, goannas and birds. Turtles also die from fishing nets, water infrastructure and grates for excluding fish, boat propellers and salinity. If you would like to know more about our turtles visit [TurtleSat](#).



Photo: Ricky-John Spencer



Photo: Teresa ter Bogt



Photo: Matt Turner

When to water

Our aquatic animals depend on water, though species can have differing water needs, ranging from wetlands which fill in spring-summer in most years to wetlands which fill only once every 3-5 years, to creeks, waterholes, anabranches (which leave the river, flow across a floodplain and return to the river) and swamps which fill from floods or rain every 2-3 years. Environmental watering can help aquatic species by manipulating the amount of water in an area, the quality of that water, how often water is applied, and at what time of year. Watering may also aim to support key plants like lignum, create food resources, provide drought refuges and flowing connections between the River and wetlands, and maintain pools of water long enough for life-cycles to complete. For example, for yabbies to emerge in summer, they need water on the floodplain from late spring.

Is watering working?

There are some simple ways that you can measure the impact that watering is having on native aquatic animals. An increasingly popular approach to monitoring your site is to become a “citizen scientist” – this means that you volunteer to collect scientific data and share that data with government scientists or nature groups. You can share your information via online free apps, websites, or by joining a group.

Examples of citizen science apps and websites include:

- [Wetlands Watch](#) : Provides a guide for how to monitor wetlands in the region;
- [Waterwatch](#): targeted at school students, this program provides hands-on learning about water quality monitoring and macroinvertebrate identification;
- [TurtleSAT](#): a recently launched website or mobile app for you to record where you have seen freshwater turtles;
- [FrogWatch SA](#): an app for use in SA to record frog calls on your smart device, and have the calls identified by an expert;
- [FrogID](#): an app for use nationally to record frogs on your smart device and have the calls identified by an expert.

Key signs that watering is working to restore aquatic animal populations include:

- improved health of wetland and fringing riparian plants like nardoo, native rushes and lignum;
- more bird species foraging in the water (e.g. herons, egrets, kingfishers);
- water bugs around the edge of a wetland;
- frogs calling in large numbers; and
- turtle nesting sites.

For more useful links and contacts see [Factsheet #3](#) and [Factsheet #6](#).



Photo: Matt Turner





Photo: Matt Turner



Oct 2013 – before watering



Jan 2014 – 2 months after first watering (58.6 ML)



Oct 2015 – after 3 watering events

Images: Google Earth

CASE STUDY Johnson's Waterhole

PARTNER/S: Renmark Irrigation Trust (RIT), Renmark Paringa Council (RPC), Renmark Paringa Landcare, local landholder & irrigator Kate Strachan.

WATERING SITE: Johnsons Waterhole, 4 ha temporary wetland on the 610 ha Ral Ral floodplain, 5km NW Renmark, adjacent to Renmark Irrigation Area.

- WATERING AIM/S:**
- maintain pools of water for 8-10 weeks in spring/summer – long enough to complete life cycles in aquatic plants, macroinvertebrates, frogs, fish and waterbirds;
 - maintain minimum soil moisture to support growth of river red gum, black box, and lignum seedlings, until tap roots reach subsurface water sources; and
 - replenish freshwater lenses over saline groundwater.

- KEY OBJECTIVES:**
1. increase frequency of flows in the flood runner to fill and sustain inundation in the waterhole;
 2. increase the number and variety of water plants and animals in the waterhole;
 3. increase food sources for waterbirds; and
 4. sustain plants around the edge of the waterhole.

- WATERING DELIVERY:**
- commenced November 2013;
 - total water delivered to 2016 = 311.8 ML;
 - water application via: pumps and sprinklers, with equipment supplied by RPC, Nature Foundation SA or RIT (in 2014, water was supplied via the RIT water system).

- OUTCOMES:**
- the number and diversity of waterbirds and land birds increased substantially, including breeding events and occurrence of the regionally threatened hardhead duck;
 - a number of frog species appeared, including the regionally vulnerable Southern bell frog;
 - aquatic and land native plant cover increased, and native plant saplings appeared;
 - observations of birds fishing indicated fish were present; and
 - indications that a freshwater lens developed overlying saline regional groundwater.



2013

2016

Photos: Anne Jensen

Further information

Anyone can help to deliver environmental water and improve nature along the River Murray...every drop counts! Are you concerned about the health along the River? Or do you want to register your interest in lending a "watering" hand?

CONTACT: Nature Foundation SA on 8340 2880, or email Natalie at natalie.stalenberg@nfsa.org.au

VISIT: the [My Healthy River Toolkit Facebook page](#) for all factsheets and tutorials.

Useful links

- [Natural Resources SA Murray-Darling Basin](#)
- [Wetlands Watch](#)
- [Waterwatch](#)
- [TurtleSAT](#)
- [FrogWatch SA](#)
- [FrogID](#)

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Australian Government



Government of South Australia

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