



Water for Nature Environmental Watering Site Monitoring Report

by Dr Anne Jensen

Warnock/McDonald site, Pike River Floodplain, South Australian Riverland

July 2013 to June 2016


Nature Foundation SA is a not-for-profit nature charity that works to Save, Protect and Restore South Australia's natural biodiversity. Since 2008 one of our flagship programs, Water for Nature, has been delivering environmental water along the Murray River to help reduce the loss and stress to ecosystems and habitats caused by river regulation and drought.

Over the last three years, our Water for Nature program has worked with 200 volunteers to deliver 4.56 gigalitres of environmental water to more than 35 wetland and floodplain sites along the Murray River.

Healthy wetland and floodplain environments are important for environmental, economic, cultural and social reasons, providing an optimal environment for flora and fauna, improved water quality for human consumption and agricultural use, and opportunities for recreation and tourism.

We work with private landholders, irrigators, community groups & local government on smaller sites to deliver environmental water, complementing larger government watering projects. Nature Foundation SA also works closely with the Commonwealth Environmental Water Holder to deliver environmental water.

Water For Nature Environmental Watering Site Monitoring Report

Site name	Warnock/McDonald site, Pike River Floodplain, South Australian Riverland
Reporting period	July 2013 to June 2016
Date prepared	July 2016
Location	 <p>The Warnock/McDonald floodplain lies adjacent to Pike Lagoon on the Pike River floodplain, 5 km downstream of Renmark, at 559-563 km from the Murray mouth. The Pike River/ Mundic Creek complex has experienced a significant decline in health over the last 50 years. However, the complex is considered to retain significant ecological character and attributes, and continues to support a high diversity of both terrestrial and aquatic habitats. This site covers 3 hectares of floodplain and temporary wetland habitat on private property at the upstream end of the Pike Lagoon flood-runner.</p>
Contact Name	NFSA Water For Nature Program Manager Natalie Stalenberg Landholders: Elizabeth Lescheid
Water Provider	Commonwealth Environmental Water Holder allocation to NFSA
Partners	Elizabeth Lescheid & Matthew Warnock, Barry & Bronwyn McDonald
Aim of watering project	The area on the property not flooded in 2011 was targeted for watering in partnership with DEWNR in 2014-15. Mature black box and river red gums in the area were looking stressed and some had died recently. Environmental watering was necessary to stop further declines in ecosystem health in the area. The site was watered in 2015-16 in partnership with NFSA.

Planning Context	Pike Implementation Program (2009)
Key objectives	Environmental watering at this site has the following objectives: <ol style="list-style-type: none"> 1. improve condition of mature trees including black box, river red gum. 2. improve cover and condition of under-storey vegetation, including lignum.
Site Description	These temporary wetlands are fringed by black box, river coobah, red gum, and some areas of lignum. One site last received natural inundation in 2011 which resulted in improvements in health of the existing vegetation. However both the mature trees are now showing signs of stress. Under a natural watering regime, this site was inundated 1 year in 2. The other site was not inundated in 2011 due to blocking banks constructed by the previous landholders (Figure 1).
Watering History 2013-16	Watering commenced in April 2015, with a total of 4 ML delivered by DEWNR. A second watering occurred in November 2015, with a top-up in January 2016, for a total of 32.1 ML delivered in 2015-16. The purpose is to maintain soil moisture in areas of stressed floodplain vegetation.
Habitat	Mature over-storey species include river coobah, and black box (and red gum on the fringes), which are found lining channels are becoming stressed and continued absence of water will result in further stress, and declining health of these mature trees. Continued dry conditions in the area may lead to a loss of viability of the seed-bank for aquatic and floodplain vegetation species. Lack of inundation, resulting in stress to lignum shrub-lands, also reduces available habitat for aquatic fauna species, as inundated lignum shrub-lands provide habitat to aquatic fauna through provision of snags and substrate for macro-invertebrates. The small site privately owned site is a significant one for several reasons: It has some of the few remaining mature black box and river red gums in this general area and forms an important part of the ecosystem of the Pike Lagoon; and the owners are working to revegetate the entire floodplain part of the property (it was originally cleared for farming).
Water Source	NFSA allocation from Commonwealth environmental water 2013-2016; 2015-16 watering delivered by pump and sprinkler irrigation by NFSA Water for Nature Regional Community Coordinator Craig Ferber and landholders Elizabeth Lescheid and Matthew Warnock
Event details	<p><i>2013-14</i> Project not commenced</p> <p><i>2014-15</i> Small watering event commenced in April 2015 (from DEWNR allocation)</p> <p><i>2015-16</i> A total of 32.1 ML delivered in two watering events (from NFSA allocation)</p> <p><i>Maximum area inundated (ha)</i> Estimated area 3 ha</p> <p><i>Duration of the environmental watering project (2013-16)</i> Initial minor watering to stressed trees, followed by seasonal watering in summer</p>

Annual Observations against key objectives <i>(including species of conservation significance (state or Commonwealth listed threatened species, or listed migratory species) observed at the site, any breeding of frogs, birds or other prominent species observed at the site and details of any observable responses in vegetation, such as improved vigour or significant new growth)</i>	2013-14 Project not commenced
	2014-15 (observations by Elizabeth Lescheid) Initial growth response observed in stressed trees following watering in April
	2015-16 (observations by Elizabeth Lescheid) Waterbird activity and tree health was monitored in relation to the NFSA watering events, and good ecological outcomes were observed in response to watering. Species of particular interest included the critically endangered Common Greenshank (also a long distance migrant), endangered Royal Spoonbill, vulnerable Great Egret and Yellow-billed spoonbill, and rare Australasian Shoveler, Black-fronted Dotterel and Swamp Harrier. There were no salinity impacts observed at the site itself and no reports of these watering events having any effect on water quality for downstream irrigators.
Future Watering	Second seasonal watering to reinforce response; assess proposal to water additional sites along Pike Lagoon flood-runner downstream to link with Pike Lagoon

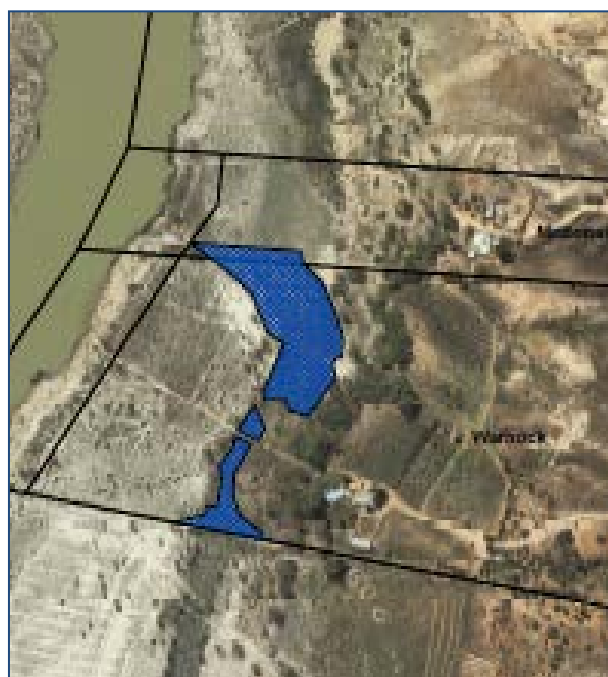


Figure 1 Warnock/McDonald floodplain, showing areas watered in 2015-16



Figure 2 Watering under way on Warnock/McDonald floodplain site during summer 2015-16
(Photos: Elizabeth Lescheid)