



Site options profile #B2

Ral Ral Floodplain (West)

- Draft

Bookmark Creek Master Plan



Location: Weir Pool 5, River Chainage Markers 608 to 569

Land Tenure: Local government, private landholders

Wetland Size: 477 hectares (Ha) (approx.)

Normal Pool Level: 16.4 mAH (varies across floodplain)

PROPOSED OPTION	
Option #1:	Improve floodplain condition on the western Ral Ral Floodplain, by supporting opportunities for environmental watering and increasing the frequency of floodplain watering associated with managed and natural high-flow events, including weir pool raising, by enhancing connectivity through the installation of supporting infrastructure.
Description	This option aims to support the capability to maximise the opportunity presented by weir pool raising and high-flow events to water the floodplain, through the installation of supporting infrastructure that increases creek and floodplain connectivity. This will occur through the installation of a regulating structure immediately north of the Goolwa Street boat ramp that will commence to flow at 16.6 mAH. There will be no requirement for complementary blocking banks. This option will be completed in conjunction with the Renmark Irrigation Trust (RIT) Environmental Watering Committee and associated Management Guidelines to ensure efforts harmonise with existing plans for the floodplain.
Outcomes	• Conservation and improvement of floodplain vegetation. • Improved soil moisture conditions.

Option #2:	Improve floodplain condition on the western Ral Ral Floodplain, by supporting opportunities for environmental watering and increasing the frequency and duration of floodplain watering associated with managed and natural high-flow events, including weir pool raising, by enabling the retention of water through the installation of regulating structures and complementary embankments to 17.2 mAH.
Description	This option aims to support the capability to maximise the opportunity presented by weir pool raising and capacity to retain water, through the installation of regulating structures and complementary blocking banks (including building-up of existing road alignments) along Goolwa Street and the outer floodplain to 17.2 mAH. This will support the capacity to extend the duration of watering events such as those associated with high-flow events and weir pool raising, as well as prompting opportunities for delivering water via pumping. This option will be completed in conjunction with the RIT Environmental Watering Committee and associated Management Guidelines to ensure efforts harmonise with existing plans for the floodplain.
Outcomes	• Conservation and improvement of floodplain vegetation. • Improved soil moisture conditions.

SITE BACKGROUND

Description

The Ral Ral Floodplain (west) is located north of Renmark and Bookmark Creek. Habitats within the floodplain have a variety of features, including flow paths, pools and rises. These areas are connected during high flow events, although human activity has altered the topography, altering the natural hydrological regimes. The floodplain has several active and inactive environmental watering sites, including Johnson's Waterhole, Jane Eliza Woodlot, Namoi Street, Begara Street, Paroo Street and Warrego Street¹.

Cultural Significance

The River Murray and Mallee Aboriginal Corporation (RMMAC) holds native title over the River Murray within the Lock 5 Reach. The First Peoples intimate knowledge and understanding of Country and active participation across all levels is vital to the effective management of this landscape.

Post-colonial Use

Prior to the regulation of flows in the River Murray and the construction of locks and weirs, the Ral Ral floodplain (west) would have had a more variable water regime. The stabilisation of water levels has led to permanent inundation of low-lying areas and reduced frequency and duration of inundation of the surrounding floodplains.

WETLAND ECOLOGY

The Ral Ral Floodplain area is generally dry and naturally flooded when flows in the River Murray exceed 60,000 megalitres per day (ML/day), with a natural frequency of one in three-five years. Currently there are three active environmental watering sites (Johnson's Waterhole, Jane Eliza Woodlot, and Namoi Street) and three identified, but inactive sites (Begara Street, Paroo Street and Warrego Street). The Ral Ral Floodplain has been affected by reduced inundation frequency, human recreational activities, pest animal pressure, saline ground water impacts, long-term inundation by saline ground water and inappropriate inundation from storm water^{1,2}.

Flora and fauna:

The major vegetation communities within Ral Ral floodplain (West) include river red gum (*Eucalyptus camaldulensis*) and black box (*Eucalyptus largiflorens*) woodland, lignum and samphire/ chenopod shrublands and sedgeland^{2,3}. There is limited information of the fauna composition at the site as no recent surveys have been conducted.

WETLAND MANAGEMENT

Current Management:

The floodplain is managed by the Renmark Paringa Council in conjunction with the RIT. The RIT Environmental Watering Committee, which consists of irrigators, and representatives from Council, the Commonwealth Environmental Water Office and local community groups, has formed to actively improve the ecological health of the floodplain. RIT has established the Management Guidelines for the Environmental Watering Sites Adjacent to the Renmark Irrigation District, which identifies numerous sites that can receive environmental water via RIT infrastructure as well as future sites that would greatly benefit from receiving environmental water but require further investigations to support its delivery. The Guidelines also outline the required infrastructure works for specific watering sites as well as a watering schedule through 2024. Recreational activities on the floodplain including hiking, biking, camping and fishing³.

In recent years the Ral Ral flowpath has been opened to enhance inundation of the floodplain through weir pool raising, with resultant strong vegetation response.

Infrastructure:

Infrastructure supporting the current e-watering sites within the Ral Ral Floodplain (west) is highlighted below³.

- **Johnson's Waterhole:** Water is supplied via the Renmark Irrigation Trust water system. Additional watering by sprinklers is supporting plantings of native species around the edges of the wetland. New installations at the waterhole have been, or will be, completed as noted in the management guidelines report:
 - Small bank at the south-western end of the site with a 300 mm diameter concrete pipe.
 - Hume floodgate on the wetland side to maintain water at full supply (17 mAHD).
 - Approximately 600 m of channelling to connect the site to the south-eastern flow paths.
 - 1,350m of channelling to connect the site to the Jane Eliza Woodlot.
- **Jane Eliza Woodlot:** Water is supplied by the RIT private line via Davis Street. New installations include a floodgate placed on the 2x350 mm and 1x 500 mm concrete pipes under the southern road embankment.
- **Namoi Street:** Water is supplied by the RIT network via Namoi Street. New installations have been or will be completed as noted in the management guidelines report:
 - 360 m of embankment at 17.2 mAHD.
 - Re-profiled old embankment to create a 2 m wide bank along the southern side of the present track.
 - 180 m of 300 mm deep channelling to connect the adjacent three floodplain depressions and to breach the northern track/old bank.
 - 300 mm diameter concrete pipe through the major embankment fitted with a Hume floodgate on the northern side.
- **Warrego Street:** Water is supplied by the RIT network. New installations at the waterhole have been or will be completed as noted in the management guidelines report:
 - 200 m of pipeline plus valve and meter to connect end of E11 to watering site.

- 380 m x 2 m wide embankment along the northern side of the floodplain to 18.2 mAHd.
- 60 m x 2 m wide embankment across the site's northern flow path to 18.2 mAHd.
- 300 mm diameter concrete pipe through the northern flow path embankment with a Hume floodgate on the wetland side.
- **Paroo Street:** Water is supplied by sprinklers.

ISSUES AND DRIVERS

As part of the Master Planning Project engagement process, an ongoing register of issues and drivers relating to sites and options was maintained. These highlighted key considerations and investigations that would need to be factored in and undertaken as part of any next steps towards realising the outcomes described within the option profiles. For Ral Ral, these included:

Environmental

- Construction and operations need to be mindful of the presence of salt in groundwater and accumulation of salt from evaporation of surface water.
- Potential loss of floodplain connectivity needs consideration.
- Investigations needed to review current infrastructure and sill levels, understand weir pool manipulation interactions and any downstream impacts.

Community/Social

- Potential loss of community access in the area - appropriate community engagement and planning needs to be undertaken.

Operational/logistics

- Current structure has integrity issues that need addressing.
- Ongoing costs and community security issues need to be considered.

KEY STAKEHOLDER INVOLVEMENT

- Commonwealth Environmental Water Office (CEWO)
- Murraylands and Riverland Landscape SA
- National Parks and Wildlife Service SA
- Renmark Irrigation Trust (RIT) – including the Environmental Watering Committee
- Renmark-Paringa Council
- Renmark-Paringa Landcare
- River Murray and Mallee Aboriginal Corporation (RMMAC)
- SA Water

REFERENCES

1. Connecting and Rehabilitating the Ral Ral Floodplain- Regional land partnerships 5 year project. Renmark Paringa Council, RIT and Renmark Paringa Landcare; 2019.
2. Reviving the Ral Ral floodplain- An options analysis paper. Renmark Paringa Council and Renmark Irrigation Trust; 2012 Aug.
3. Harper A, Harper M. Management Guidelines- Environmental Watering Sites Adjacent to Renmark Irrigation District. Renmark Irrigation Trust; 2019.



Ral Ral Floodplain (West)

Inundation Extents

-  5GL - At pool conditions
-  20GL 50cm - Weir Pool Raise
-  17.2 mAHd (Option 1)
-  Murray Flood 1956
-  Proposed Works
-  Proposed Embankment

Option # 2

Option # 1



0 0.25 0.5 Kms

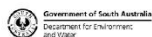
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Department for Environment and Water
81-95 Waymouth St, Adelaide 5000
environment.sa.gov.au

Data Source DEW - TOPD, Aerial Imagery 2014, DEM,
Wetland Structures, Model Flow Extents
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Compiled South Australia Lambert
Projection
Datum GDA 1994

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