



Site options profile #L4B

Katarapko Floodplains East

Loxton Riverfront Reserve - DRAFT

Lock 3 Master Plan



Location: Weir Pool 3, River Chainage Markers 489 to 488

Land Tenure: Local Government Owned

Wetland Size: 68 hectares (Ha)

Normal Pool Level: 9.8 mAHD

PROPOSED OPTIONS	
Option #1:	Improve floodplain condition in the western (downstream) portion of the floodplain, by supporting opportunities for environmental watering and increasing the duration of floodplain watering associated with managed and natural high-flow events, by enabling the retention of water through the installation of regulating structures and complementary embankments to a height of 11.8 mAHD.
Description	This option aims to support the capability to retain water through the installation of regulating structures and complementary blocking banks to 11.8 mAHD, in order to extend the duration of watering events such as those associated with high-flow events as well as prompting opportunities for delivering water via pumping. Connectivity could be improved by reinstating natural commence to flow levels and un-obstructed flow through the main inlets and connections within the wetland complex, through a review and remediation of sill levels and re-profiling of obstructed flow paths.
Outcomes	• Benefits associated with an improved watering regime. • Conservation and improvement of floodplain vegetation. • Improved soil moisture conditions. • Replenish freshwater lenses over saline groundwater. • Support temporary wetland habitat to promote food sources for waterbirds.
Option #2:	Improve floodplain condition in the eastern (upstream) portion of the floodplain, by supporting opportunities for environmental watering and increasing the duration of floodplain watering associated with managed and natural high-flow events, by enabling the retention of water through the installation of regulating structures and complementary embankments to a height of 12.8 mAHD.
Description	This option aims to support the capability to retain water through the installation of regulating structures and complementary blocking bank to 12.8 mAHD, in order to extend the duration of watering events such as those associated with high-flow events as well as prompting opportunities for delivering water via pumping. Connectivity could be improved by reinstating natural commence to flow levels and un-obstructed flow through the main inlets and connections within the wetland complex, through a review and remediation of sill levels and re-profiling of obstructed flow paths.
Outcomes	• Benefits associated with an improved watering regime. • Conservation and improvement of floodplain vegetation. • Improved soil moisture conditions. • Replenish freshwater lenses over saline groundwater. • Support temporary wetland habitat to promote food sources for waterbirds.

SITE BACKGROUND

Description

Katarapko Floodplains (East) consist of five wetlands (Clarks Floodplain, Loxton Riverfront Reserve, Rilli Reach, Rilli Lagoons and Thiele Flat) located on the eastern bank of the River Murray, east of the Katarapko Island^{1,2}. Loxton Riverfront Reserve is part of a mosaic of semi-connected habitat patches along the eastern side of the main River Murray channel from Bookpurnong to Loxton, opposite the Murray River National Park (Katarapko Island). The reserve is accessible to the public and has several public outdoor facilities (e.g. BBQ facility, picnic area, shelter) and contains the Loxton Caravan Park, a significant tourism asset for the region and local area.

Cultural Significance

The River Murray and Mallee Aboriginal Corporation (RMMAC) holds native title over the River Murray within the Lock 3 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

Since river regulation and the construction of locks and weirs along the River Murray, the water regime in the wetland complex has been altered. The lack of inundation in these areas has resulted in the decline of floodplain habitat within the wetland complex. Irrigation activities within Katarapko Floodplains (East) have also resulted in saline groundwater issues within these floodplains. A series of Salt Interception Schemes (SIS) have been installed in these areas to reduce the salinity impacts on the environment.

WETLAND ECOLOGY

Katarapko East floodplains contains a number of smaller floodplain areas, currently watered by the Nature Foundation of SA (NFSA) with an aim to regenerate and sustain vegetation on the floodplain, notably river red gums, black box and lignum shrubland. The conservation rating is considered low to high^{3,4}, but the ecological value has likely increased with the recent active management occurring at this site.

Flora and fauna: The major vegetation communities within Katarapko East Floodplain include river red gum (*Eucalyptus camaldulensis*) and black box (*Eucalyptus largiflorens*) woodland, lignum and samphire/ chenopod shrublands. Low fauna diversity and abundances were recorded at these sites during the baseline survey in 2004, likely as a result of the temporal nature of the wetland and water quality issues⁵.

WETLAND MANAGEMENT

Current Management:

The Katarapko Floodplains (East) are included in the NFSAs Water for Nature program, which is supported by the Commonwealth Environmental Water Office (CEWO) to deliver environmental water to wetland and floodplain sites along the Murray River. Options outlined within this profile seek to align and complement these activities.

The Loxton Riverfront Reserve is accessible to the public and is managed as a recreational reserve by the District Council of Loxton Waikerie. Current management targets include the regeneration of black box and lignum on the higher elevations of the floodplain while also filling a chain of floodplain lagoons and wetlands.

Infrastructure:

Water delivery within the Katarapko Floodplains (East) includes the use of water pumps and sprinkler irrigation methods, utilising a combination of temporary and permanent infrastructure. The installation of additional embankments and structures would help optimise the current management efforts and increase opportunities for outcomes within the floodplain. Management interventions should consider several recreational structures (e.g. BBQ facilities, shelters, picnic areas) located near and within the Loxton Riverfront Reserve as well as the impacts to the Loxton Caravan Park, including access.

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 Loxton Riverfront, these included:

Environmental

- Note that the eastern end of the area is currently used as a spill-over for stormwater retention which may create management issues during inundation.

Community/Social

- This is a site with several community uses. Consider recreational structures onsite, maintaining community access, walking trails, waste disposal station and impact of camping sites being temporarily out of commission.
- The local caravan park is an important stakeholder.

Economic

- Consider potential impacts on historic village area.

Operational/logistics

- Assess current road level to determine capacity to hold water. Consider extending and increasing height of road on west boundary for option #1.
- Existing pipe culvert could be upgraded to a regulating structure.

KEY STAKEHOLDER INVOLVEMENT

- Central Irrigation Trust (CIT)
- Commonwealth Environmental Water Office (CEWO)
- Loxton District Landcare
- Loxton Waikerie Council
- Murraylands and Riverland Landscape Board
- Loxton Riverfront Advisory Group
- National Parks and Wildlife Service SA
- Nature Foundation of SA
- Regent Parrot Recovery Team
- River Murray and Mallee Aboriginal Corporation (RMMAC)
- SA Water
- Loxton Caravan Park

REFERENCES

1. Jensen A. Water for Nature Environmental Watering Site Monitoring Report- Loxton Riverfront Reserve, Lock 4 to Loxton Reach, South Australian Riverland. NFSA; 2016 Jul.
2. Jensen A. Delivery of Environmental Water by Water For Nature Program in the South Australian River Murray Valley 2013-16. NFSA; 2016 Oct.
3. Jensen A, South Australia, Department of Environment and Natural Resources, South Australian River Murray Wetlands Management Committee. Wetlands atlas of the South Australian Murray Valley: a summary of current knowledge of Murray Valley wetlands as a basis for integrated catchment management. Adelaide: Dept. of Environment and Natural Resources; 1996.
4. Thompson MB. River Murray Wetlands - Their Characteristics, Significance and Management. Adelaide: University of Adelaide for the Department of Environment and Planning and the Nature Conservation Society of South Australia; 1986.
5. SKM. River Murray Wetlands Baseline Survey – Final Report. Sinclair Knight Merz, Armadale. Prepared for the River Murray Catchment Water Management Board.; 2004.

