



Site options profile #L2

Katarapko Island (North)

- Draft

Lock 3 Master Plan



Location: Weir Pool 3, River Chainage Markers 513 to 498
Land Tenure: Crown Land (National Parks and Wildlife Service SA)

Area: 1,630 hectares (Ha) (approx.)
Normal Pool Level: 9.8 mAH

PROPOSED OPTIONS	
Option #1:	Improve floodplain condition 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.
Description	This option aims to optimise the floodplain inundation and retention extent through the installation of regulating structures and complementary embankments. Preliminary investigations have identified that an operating height of 13 mAH could optimise outcomes whilst minimising impacts associated with construction and ongoing operations and maintenance. This increase in opportunity for e-watering and high-flow retention could lead to the improved condition of floodplain vegetation, including black box habitat. In addition to exploiting floodplain water associated with managed and natural high-flow events, additional opportunities for water delivery to be investigated include: • Water siphoning via <i>The Splash</i> during Katarapko raising events, and • Water pumping, as proposed in the Regent Parrot Recovery Plan. Katarapko Island (North) falls within the 'Katarapko regent parrot floodplain habitat zone', identified as part of Regent Parrot Recovery Plan. The strategic watering of this site to support the conservation and improvement of vegetation important to regent parrots, is seen as a key part of the realising the conservation of the current population.
Outcomes	• Benefits associated with an improved water regime. • Improved condition of floodplain vegetation. • Improved soil moisture conditions. • Increased opportunities for stands of black box woodland to receive water. • Conservation and improvement of vegetation important to regent parrots. • Support the conservation of the current regent parrot population.

SITE BACKGROUND

Description

Katarapko Island (North) is located immediately downstream of Lock 4 and the township of Berri and lies within the Katarapko section of the Murray River National Park. Situated between the Katarapko Creek anabranch and the River Murray channel, the north island consists of temporary wetlands and interconnecting disposal basins. The island's only land access is via Stone Weir, located North West of the island near the inlet to Katarapko Creek.

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

Katarapko Island (North) was historically used for livestock grazing as well as timber harvesting. Large volumes of timber were cut from the island, including river red gum, which was sent to a sawmill located on the north-eastern section of the island. Since river regulation and the construction of locks and weirs along the River Murray, the water regime of the island's waterways has been altered. The lack of inundation in these areas following the construction of Lock 3 in 1925, has resulted in the decline of floodplain habitat within the wetland complex.

WETLAND ECOLOGY

Ecological role: Katarapko Island (North) is part of a larger protected area with diverse habitat and wetland types and of high conservation value^{1,2}. The island is within the Murray River National Park which is proclaimed to conserve a significant proportion of South Australia's floodplain environments which are not represented widely in other reserve systems³.

Flora and fauna: The major vegetation communities within Katarapko include river red gum (*Eucalyptus camaldulensis*) and black box (*Eucalyptus largiflorens*) woodland, lignum and samphire/ chenopod shrublands. It is home to a wide variety of wildlife, some of them listed as species of conservation significance under national and/or state legislation⁴. Katarapko is a priority floodplain for environmental flows in South Australia and is currently the only Demonstration Reach for Native Fish in South Australia^{4,5}.

WETLAND MANAGEMENT

Current Management:

The Department for Environment and Water's (DEW) National Parks and Wildlife Service SA is responsible for the management of the Murray River National Park. The Katarapko section of the park is a popular destination for recreational tourism, including kayaking, fishing, camping and birding. As noted in the sub-section below, there is no water-related infrastructure on Katarapko Island (North) designed to improve floodplain condition.

Infrastructure:

Currently, there are temporary banks on the Katarapko Island North to support pumping activities.

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 Katarapko Island North, these included:

Environmental

- Due to the isolated nature of the island, there is a risk associated with allowing easier access from mainland to the island.
- There is a low to medium risk associated with acid sulfate soils at this site. This would require further assessment before any construction works or wetting and drying activities are undertaken.
- Construction and operations need to be mindful of the presence of salt in groundwater and accumulation of salt from evaporation of surface water.
- Need to consider whether water quality of impounded water can be managed.
- Note that the proposed structure could impede flows; clear environmental objectives needed.

Cultural

- High density of cultural material in the area. Construction works need to be mindful not to disturb areas of cultural importance.

Community/Social

- Site has strong community and historical value; further construction may be unpopular.
- National parks management requirements are important for this option; need to consider requirements for closing the park during construction including communications.

Economic

- Potential opportunity for tourism (kayaking/ canoeing); construction needs to be mindful of these recreational activities.

Operational/logistics

- Construction works need to be mindful on the impact on existing vegetation and cultural heritage within Katarapko Island. Access will be difficult as all equipment will need to be hauled via a barge. However, new infrastructure as proposed in the Katarapko Creek option profile could be utilised to allow for vehicle access and construction activities on the island. There would need to be clarity on sourcing of embankment materials, barge logistics and complementary embankments.

KEY STAKEHOLDER INVOLVEMENT

- Berri Barmera Council
- Berri Barmera Landcare
- Central Irrigation Trust
- Commonwealth Environmental Water Office (CEWO)
- Friends of the Riverland Parks
- Katarapko Advisory Panel (KAP)
- Murraylands and Riverland Landscape Board
- National Parks and Wildlife Service SA
- Regent Parrot Recovery Team
- River Murray and Mallee Aboriginal Corporation (RMMAC)

- SA Water

REFERENCES

1. 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.
2. 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.
3. DENR. Murray River National Park Management Plan (Including Rilli Island, Media Island and Kapunda Island Conservation Parks). 1994.
4. DEW. EPBC Self-assessment- Operation of surface water management infrastructure on the Katarapko Floodplain. 2019.
5. Wallace TA. Eckerts-Katarapko floodplain Tree condition survey data April 2015-March 2019. Report produced by Riverwater Life Pty Ltd for the Department for Water and Environment, South Australian Government (Draft version released April 2019); 2019.
6. Grealish G, Shand P, Grocke S, Baker A, Fitzpatrick R, Hicks W. Assessment of Acid Sulfate Soil Materials in the Lock 1 to Lock 5 Region of the Murray-Darling Basin. CSIRO: Water for a Healthy Country National Research Flagship.; 2010.

