iSimangaliso
News Flash
iSimangaliso Wetland Park
KOSI BAY COASTAL FOREST LAKE SIBAYA SODWANA BAY UMKHUZE FALSE BAY CHARTERS CREEK LAKE ST LUCIA CAPE VIDAL MAPHELANE

iSimangaliso – Lake St Lucia changing with time

The restoration of the Lake St Lucia Estuary that began in 2012 is the largest wetland rehabilitation project underway in South Africa. Scientists are keenly monitoring the status of the Lake following the restoration activities. Here is the latest update presented by iSimangaliso's contracted estuarine ecologist, Nicolette Forbes of Marine and Estuarine Research (MER).

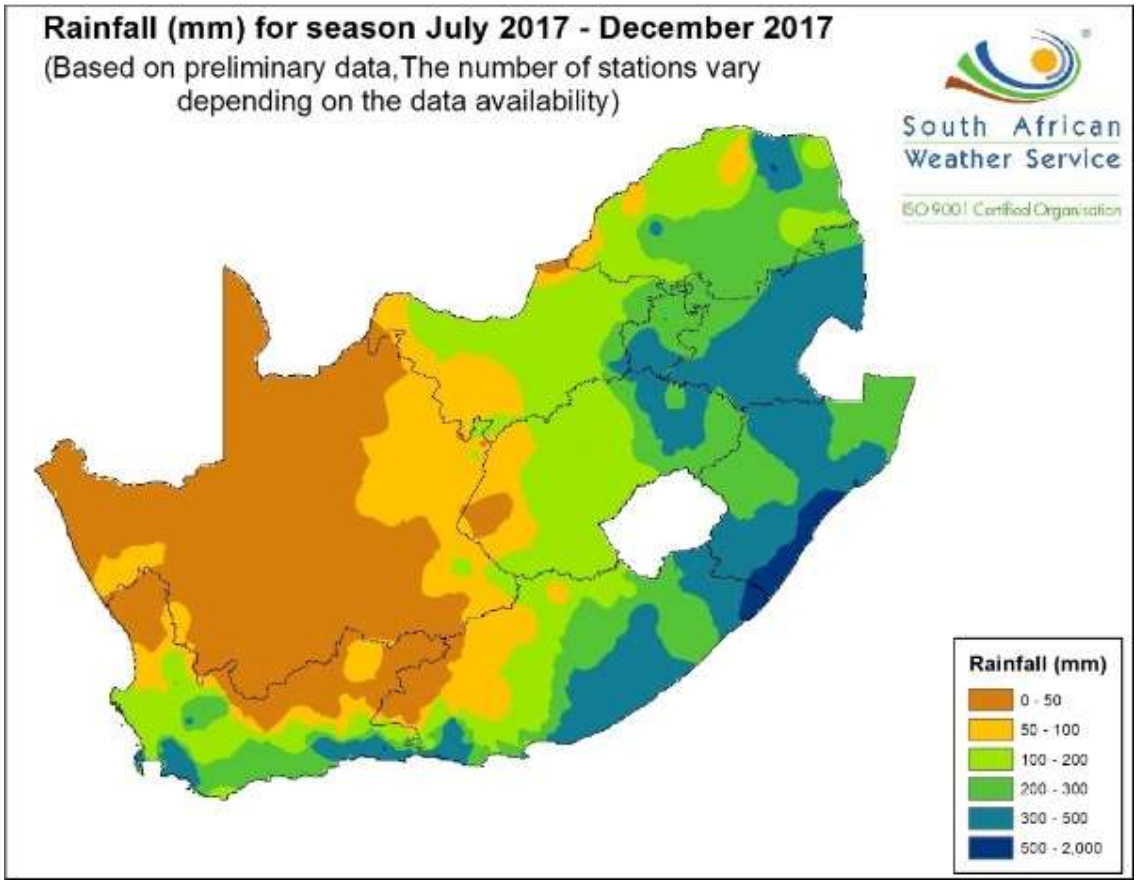
Says Forbes, "Restoration of the estuary has continued since the completion of the major intervention, which was to remove dredge spoil between the uMfolozi River and the estuary, with the decommissioning of the Estuary car park and removal of the toilet block. This was done in recognition of and as preparation for the dynamic nature of the estuary mouth as it settles into its original configuration."

The northern end of the sand barrier after removal of the toilet block and casuarinas created a fantastic wide open vista towards Maphelane

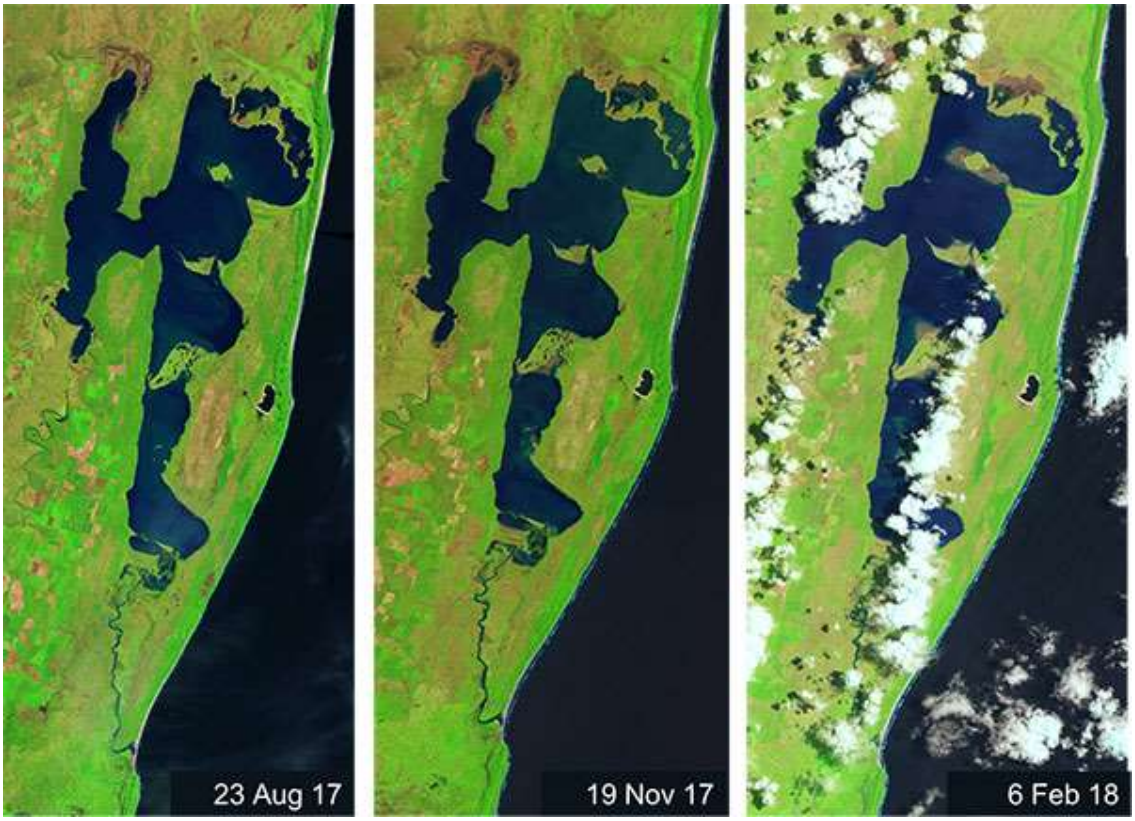
Current State

Rainfall and water levels

Relatively good winter rainfall of approximately 250 mm, received by the estuary and in its broader catchment area, between June and September 2017, maintained water levels through the dry period (satellite images). However, the onset of a hot and windy summer which has only so far yielded less than 300mm of rain, has resulted in wind related changes in water level as well as high levels of evaporative loss.

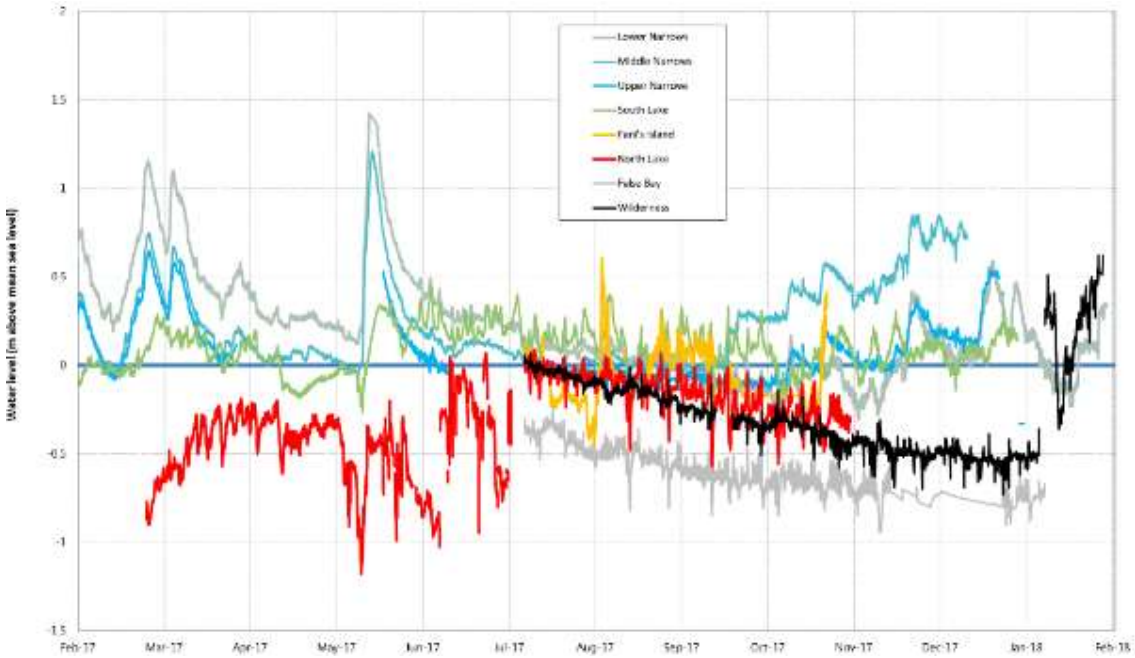


The major driver of water levels in the system over this period was the input from the uMfolozi River following its newly widened linkage behind the beach barrier feeding water into the estuary via the lower Narrows. These inflows drove the consistently higher water levels in the lower parts of the estuary during winter and through to early summer. The water level readings from the real-time stations indicated that these levels were eventually transferred through to South and North Lake and contributed to the maintenance in water levels over winter. The levels equalised over winter and were soon followed by falling levels at the False Bay, North Lake and Wilderness sites between July and November 2017. Rising levels in the Narrows have been occurring since late September and these inflows can be expected to eventually penetrate into the lake. Rises in water levels in these northern areas would have been augmented by any inflows from the rivers entering the northern parts of the estuary: the uMkhuze, uMzinene, Hluhluwe and iNyalazi catchments.



Water levels in the estuary, while still shallow in the northern regions, were sustained through the 2017 winter months by direct local rainfall and river inputs as can be seen in the satellite images from July and November 2017.

Water levels are measured at various stations within the estuary and are included in the plot below. Water in the Narrows is above Mean Sea Level and the higher levels in the Narrows have supplemented the southern lake levels. Despite the dryness of winter, some shallow water even remained in the northern parts of the estuary with North Lake, False Bay and the Wilderness water quality stations all registering some water depth.



Mouth status

The mouth of the estuary has remained closed since October 2014. Since then a number of over-washing events have occurred with the influence of the sea being clearly seen in the real time monitoring data showing as increases in salinity moving through the Narrows and even into Catalina Bay. Says Forbes, “What is really needed now is a strong freshwater pulse from the uMfolozi of a volume large enough to overtop the sand barrier or flow with enough velocity to break through and begin the process of establishing a new mouth.”

Sediment

Changes in the lower estuary in response to the increased freshwater inputs from the uMfolozi have included the deposition of sediments in the lower reaches of the estuary through to Honeymoon Bend. This accumulation of sediment during the early phase of restoration was anticipated in the short term. The analysis of sediments has formed part of a baseline sampling programme and the sediments in this lower area are characteristically fine fluvial (river derived) sediments. This is considered to be a short term consequence of the current conditions of low rainfall without a significant pulse of water to open the mouth. Says Forbes, “In the long term, once the uMfolozi River has had a chance to raise water levels in the estuary and then begin working through the sand barrier, outflows and tidal flushing will result in a net loss of this fine material from the lower reaches of the estuary.”

Aquatic plants

Large areas of South Lake and to a lesser extent Fani’s Island area had been colonised by the submerged aquatic plant, Stuckenia pectinata. This plant thrives in stable water conditions with salinities below 20. These macrophytes in turn will support large numbers of epiphytic algae and at times other invertebrate fauna and in this way create important feeding and shelter habitats for a wide variety of

juvenile fish. Its presence and abundance in the estuary during December 2017 indicated the sustained presence of water in the upper estuary.

Researcher Bruce Mann took this aerial photograph of the Lake St Lucia mouth area in January 2018.

Submerged aquatic plant, Stuckenia pectinata in South Lake

The long view

"The El Nino effect still seems to be lingering with below average seasonal rainfall still a reality. The promise of good early rains in the first quarter of 2018 have not yet really borne fruit. Despite being one of the most studied estuaries in South Africa, no research exists with a sustained historical

single mouth configuration. As we move through late summer we remain hopeful that good rains will be received that will speed up the restoration process, and watch with interest as we monitor changes as the estuary returns to its natural configuration," says Forbes.

For details of licensed turtle tour operators or more information on the iSimangaliso Wetland Park, visit our website at www.isimangaliso.com. Media enquiries should be directed to Slindile Msweli at sli@isimangaliso.com.

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This iSimangaliso Newsflash is regularly issued by the iSimangaliso Wetland Park Authority. These communications underline our ongoing commitment to update, inform and involve the public, holidaymakers and interested parties about the Park, and to address any concerns brought to our attention.
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