



**water & sanitation**

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA



NATIONAL DEVELOPMENT PLAN  
*Our Future - make it work*

# CLASSIFICATION OF SIGNIFICANT WATER RESOURCES AND DETERMINATION OF RESOURCE QUALITY OBJECTIVES FOR WATER RESOURCES IN THE USUTU TO MHLATHUZE CATCHMENTS (WP11387)

**Project Management Committee, Virtual: 4 November 2022**



WATER IS LIFE - SANITATION IS DIGNITY

# ESTUARIES ECOLOGICAL STATE: REPORT ON FIELD SURVEY, 3 – 8 October 2022

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WATER IS LIFE - SANITATION IS DIGNITY

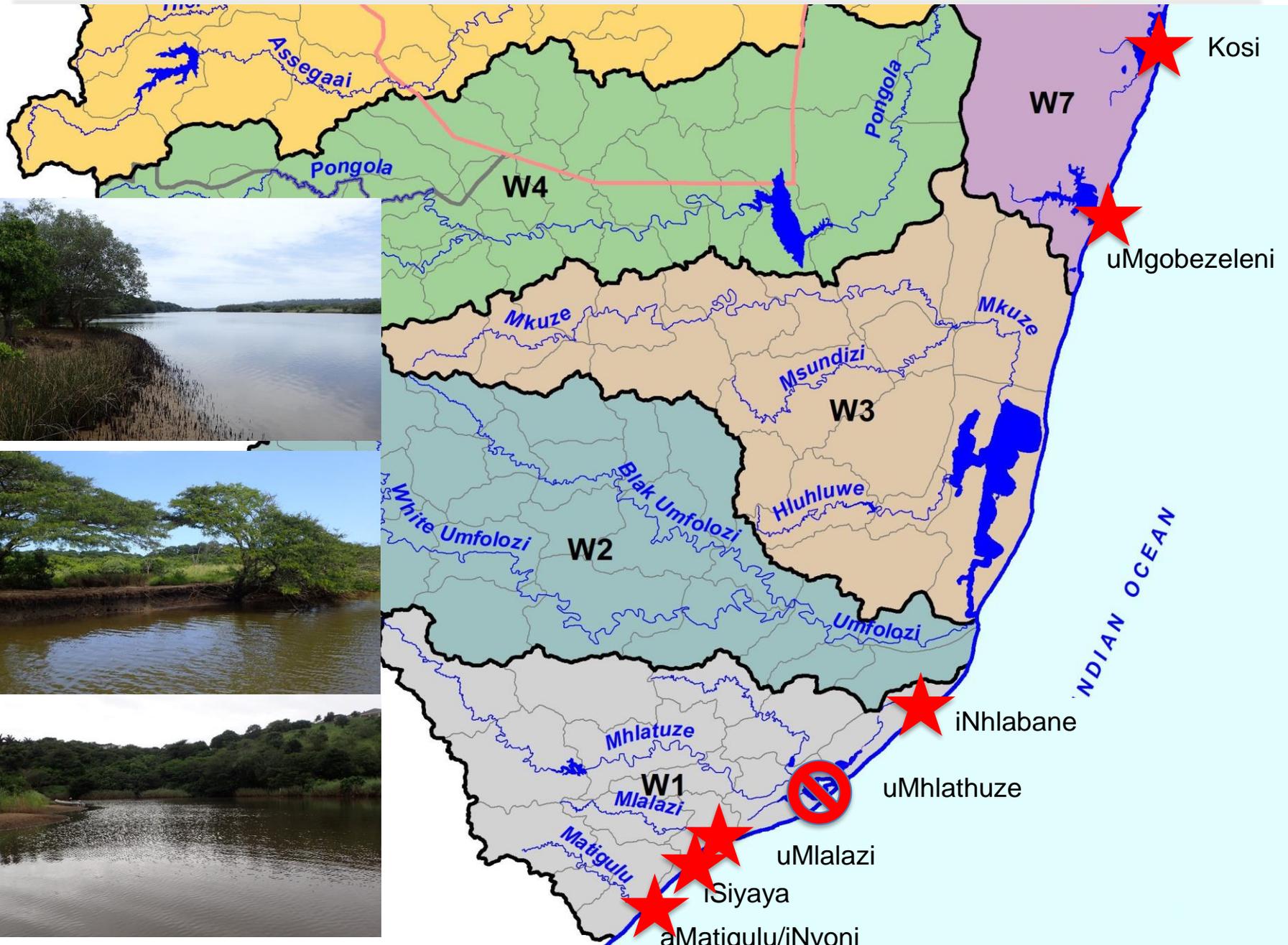


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# ESTUARIES FIELD VISIT



# AMATIGULU/INYONI

## B Category (available information)

- 1 of only 4 estuaries in a near-natural state (A/B to B)
- System in a good condition, but signs of possible decline observed
- System was closed with over wash at low water levels
- Observed significant areas of submerged macrophytes & filamentous algae. Pending water quality result, can be natural cycle with bloom developing when water level is naturally low after a breaching.
- Low number of fish species recorded (15 to previous 54 species)
- Benthic invertebrates - very high number of bilharzia snail vectors & alien invasive *Terebia granifera* snails
- High bird numbers



# ISIIYAYA

## E Category

- ↓ further in condition – likely an F
- In protected area – Provincial Reserve
- Little to no flow reaching the estuary
- Only small stagnant pools observed in mouth area
- Very high turbidity in middle & upper reaches linked to possible slimes dam contamination. To be confirmed with satellite imagery.
- 18 species of fish sampled in the lower reaches (13 recorded before)
- Very few waterbirds present. High turbidity has negative impact on visual piscivorous waterbird species (& possibly invertebrate feeders)



# UMLALAZI

## B Category

- 1 of only 4 estuaries in a near-natural state (A/B to B)
- In protected area – Provincial Reserve
- Field visit indicate in good condition, **but concern over WQ**
- Very healthy mangroves and saltmarsh habitat
- Very high species diversity, e.g. 46 fish species
- NB nursery area for fish & NB for birds
- Sand mining an emerging concern...
- **Will be very important to maintain its present baseflows (prevent mouth closure) & water quality state (no low oxygen levels) to ensure functionality and ecosystem services.**



# INHLABANE

## E Category

- ↓ further in condition – likely F
- Very high unnatural sand dune formed in mouth indicating years of flow depravation. Not connected to sea in years.
- No flow over the Nhlabane barrage - **EWR not released in years**
- Fishway non-functional - Only 3 fish species recorded, all freshwater taxa tolerant of poor water quality.
- Extensive loss of open water area due to macrophyte growth
- System was fresh - leaches, water lilies and tadpoles
- Bilharzia snail vectors & alien invasive *Terebia granifera* snails
- **No estuarine functionality remain in what was once an important estuarine lake in the region, due to freshwater flow depravation**



# UMGOBEZELENI

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## B Category

- System in relatively good condition
- 1 of only 4 estuaries in a near-natural state (A/B to B)
- Protected area - iSimangaliso Wetland Park
- **Fully functional estuarine lake system - More NB than previously noted**
- New individuals of black mangroves observed (>50)
- 18 fish species (14 recorded previously)
- New recruitment of fish in uMgobezeleni Lake (< 2 week old freshwater mullet that recruited from the sea)
  
- **However, urgent action needed to:**
  - **Protect mangroves (e.g., road through mangroves & bark harvesting)**
  - **Manage fishing pressure (illegal gillnets in lake)**



# KOSI

## A/B Category

- 1 of only 4 estuaries in near-natural state (A/B)
- Protected area (iSimangaliso Wetland Park & UNESCO World Heritage Site) & Ramsar site
- **Slipping in condition ↓ Likely now a B**
  - ↑ clearing of natural vegetation (land use change)
  - ↑ harvesting pressure on mangroves – ‘Lolli pop’ trees
  - ↑ fish traps (first time fish traps observed in 3<sup>rd</sup> Lake)
  - ↑ illegal gillnets observed for the first time in 4<sup>th</sup> Lake
  - **Significant submerged macrophyte & macro algae growth in 3<sup>rd</sup> Lake. Local fisherman not seen growth in fish traps before. Indicating nutrient enrichment but will need to confirm source.**



# MHLATUZE

## Low D to E Category

- Could not access in October: Transnet industrial strike action
- Propose use of available information; DFFE Estuary Management Plan & Situation Assessment
- **Impact is on confidence rating, level of detail for RQOs & recommendations for improvement**
  - Highly modified due to port activities
  - Important system: Mangroves and nursery area
  - Recommendations for improvement important
  - Use available data; acknowledge uncertainties, e.g. extent of mangroves as updated mapping not possible

# Thank you for assistance – DFFE, NMU, ORI, Ezemvelo KZN Wildlife & DWS

