Determination of Water Resource Classes, Reserve and the Resource Quality Objectives in the Keiskamma and Fish to Tsitsikamma Catchments

Background Information Document

Project Steering Committee Meeting – 24 June 2025

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

PURPOSE OF THIS DOCUMENT

The purpose of this background information document is to provide key stakeholders with summary information, progress and results.

This briefing document provides details on the proposed Resource Quality Objectives (RQOs) for prioritised rivers, dams, estuaries, groundwater, and wetland systems within two Integrated Units of Analysis (IUAs) in the study area: IUA_T03 (Mthatha) and IUA_T04 (Pondoland). These IUAs serve as examples to illustrate the structure and format of the RQOs.

OBJECTIVES OF THE PROJECT

Chapter 3 of the National Water Act, 1998 (Act 36 of 1998) provides for the protection of water resources through the implementation of Resource Directed Measures (RDM) which include the classification of water resources, determination of the Reserve and setting of Resource Quality Objectives (RQOs).

The objective of this study is, therefore, to co-ordinate the implementation of the Water Resource Classification System (WRCS) published as Regulation 810 in September 2010 for the determination of water resource classes, the Reserve and associated RQOs.

The results of this study will guide the Department of Water and Sanitation (DWS) to meet the objectives of protecting the water resources within this catchment.

STUDY AREA AND RESOURCE COMPONENTS

The study area comprises the water resources within the Mzimvubu to Tsitsikamma Water Management Area (WMA 7) and includes the major river systems of Great Kei, Mbashe, Great Fish, Sundays and Gamtoos Rivers as well as the smaller drainage regions in-between.

All the water resource components are considered, namely rivers, dams, wetlands, groundwater and estuaries and, where applicable, integration/ linkages between these components were considered.

STUDY PROGRESS

In accordance with the Integrated framework for the determination of water resource classes, Reserve and RQOs, Steps 1 to 5 have been completed, and the study team is currently conducting Step 6 **(Figure 1). Figure 2** further illustrates the procedure in determining RQO steps.

Kowie Estuary

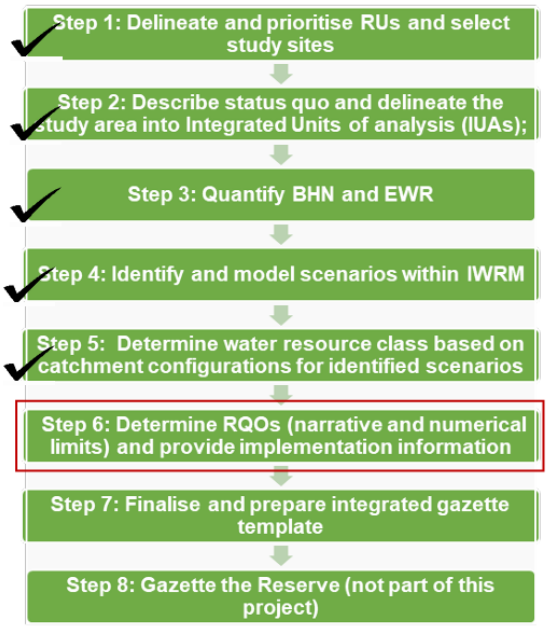

Figure 1: Integrated framework for the determination of water resource classes, Reserve and RQOs

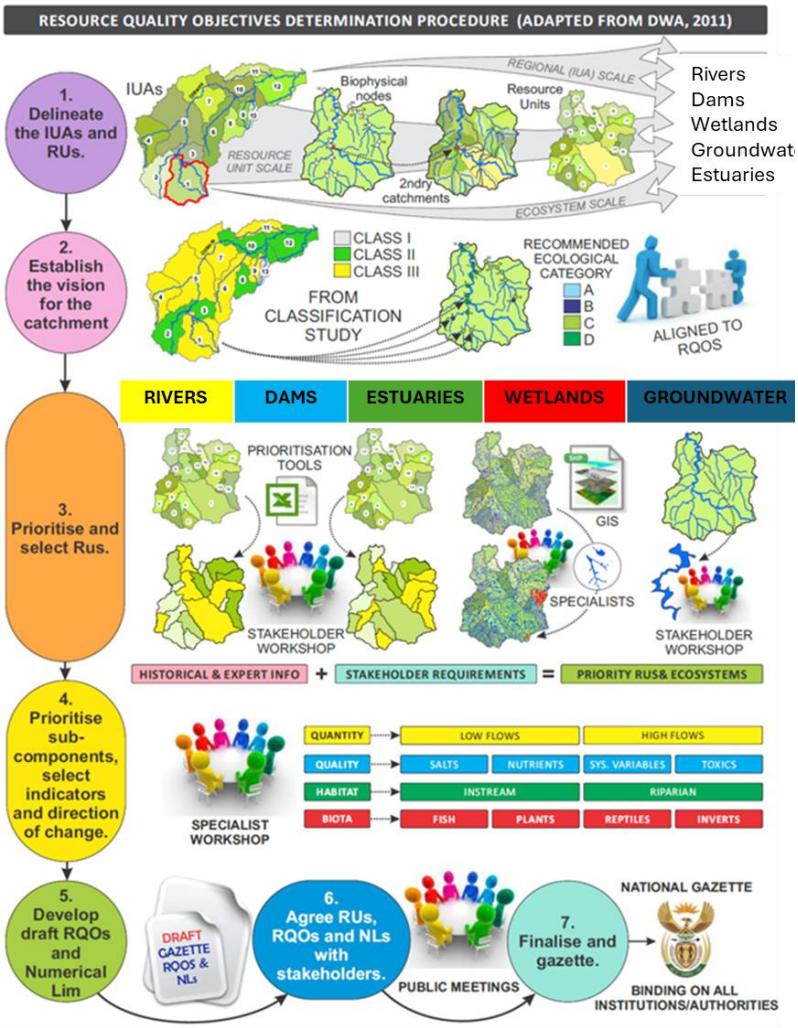

Figure 2: 5 Step RQO process

WHAT ARE RESOURCE RUALITY OBJECTIVES

Resource Quality Objectives (RQOs) are objectives established to ensure sustainable water resource management by balancing environmental protection and human needs.

Typically expressed as narrative statements, RQOs sometimes include broad quantitative descriptions, with numerical limits formulated for significant water resources to enable monitoring and compliance assessment. For this study, covering the Keiskamma, Fish, and Tsitsikamma catchment areas, RQOs have been determined for all water resources, including rivers, major dams, estuaries, wetlands, and groundwater.

In determining RQOs it is important to recognise that different water resources will require different levels of protection. In addition to achieving the Water Resource Class (**Figure 3**), the RQOs determined will ensure that the needs of all users and competing interests who rely on the water resources are considered.

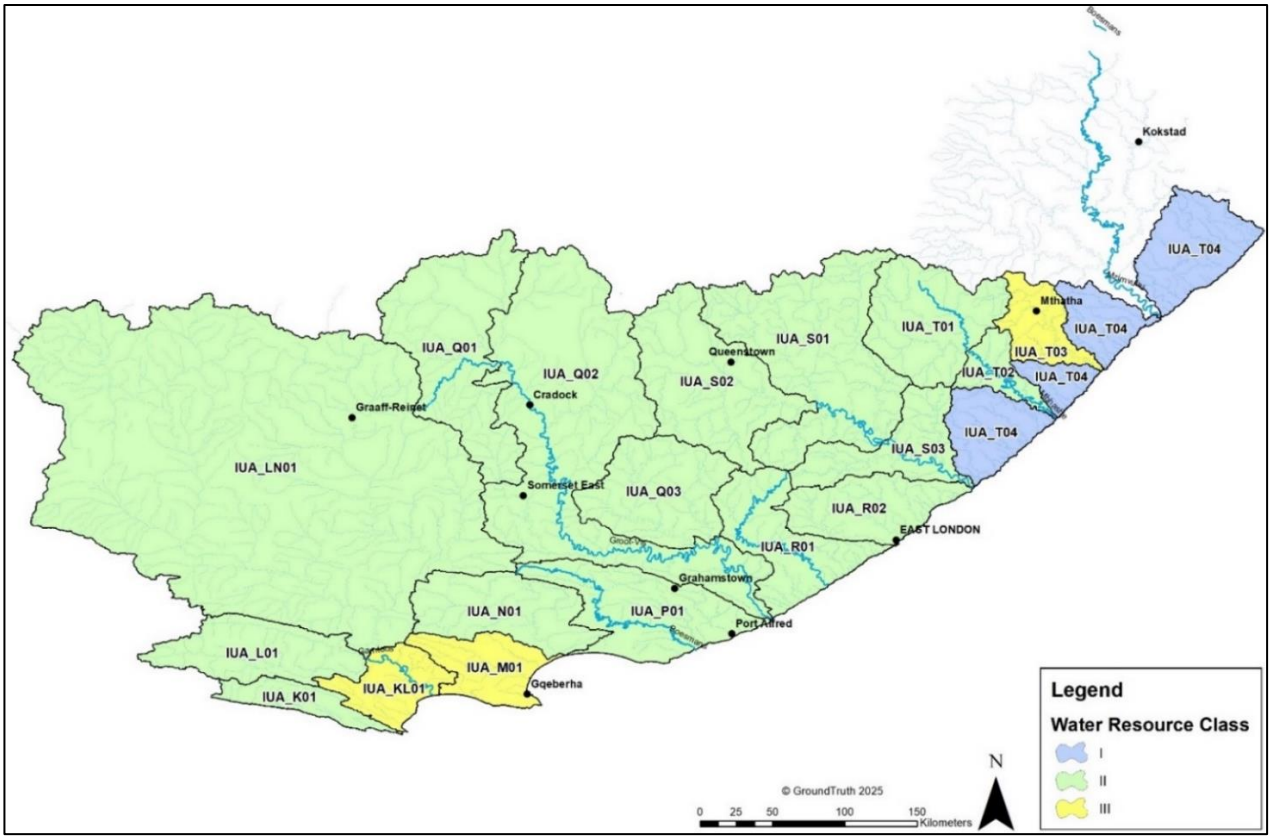

Figure 3: Water resources classes throughout the Keiskamma, Fish to Tsitsikamma study area

DETERMINED INDICATORS FOR WHERE RESOURCE QUALITY OBJECTIVES WILL BE SET PER PRIORITISED WATER RESOURCE

This briefing document provides an overview of the identified components, sub-components and indicators for which RQOs have been determined for IUA_T03 (Mthatha) and IUA_T04 (Pondoland) (Figure 3). These proposed RQOs for these selected IUAs will be presented at the upcoming PSC meeting on 24 June 2025 in detail.

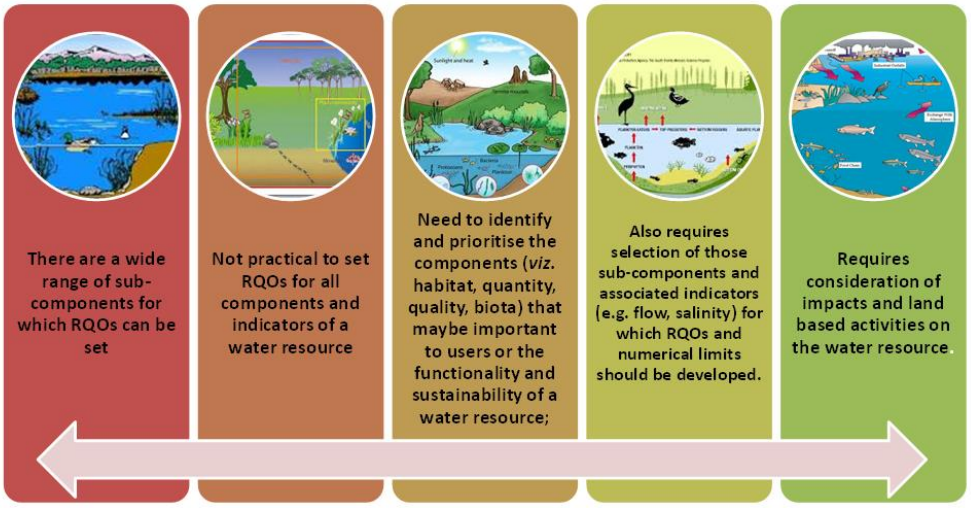

Figure 3: Prioritisation of sub-components and selection of indicators

Furthermore, all proposed RQOs for all priority water resources for all 19 IUAs are included in the RQO Report. The full report can be accessed on the DWS website:: https://www.dws.gov.za/RDM/WRCS/kft.aspx

EXAMPLE OF THE DETERMINED RESOURCE QUALITY OBJECTIVES: IUA _T03 (MTHATHA)

This IUA was delineated as a **Class III**. Note: This IUA has priority RU for rivers, dams, estuary and groundwater. There are no prioritised wetlands within this IUA, however, an example of how the wetland RQOs is determined is provided for IUA_T04 (Pondoland). Refer to **Table 2 to Table 5** which provides an example of proposed RQOs for the mentioned water resources for one of the selected priority RUs within IUA_T03 and **Table 6** for the wetland RQOs for IUA_T04.

Table 2: Draft RQOs for priority river RU in IUA_T03 (Mthatha River)

Component	Sub- component	Indicator	RQO Narrative	RQO Numeric		TPC
Priority RU 18.2						
Quantity	Low flows	Maintenance and drought flows required for the lower Mthatha River	EWR maintenance low and drought flows: Mthatha River at MTHA01_I (-31.9262; 29.1364) in T20G nMAR = 389.2 x10^{6}m3 TEC=C category		**Maintenance (m^3/s)**	**Drought (m^3/s)**
				Oct	2.471	1.808
				Nov	2.974	1.894
				Dec	2.925	1.803
				Jan	3.033	1.146
				Feb	3.686	1.418
				Mar	4.049	2.221
				Apr	3.684	1.644
				May	2.706	2.014
				Jun	2.340	1.462
				Jul	2.177	1.314
				Aug	2.053	1.442
				Sep	2.194	1.343
	High flows	Freshetts and annual flood required for the lower Mthatha Rivers (MCM)	EWR freshetts and flood		**Freshets / flood**	
					m^3/s	**Duration (days)**
				Oct	15	4
				Nov	15	4
				Jan	15	4
				Feb	15	4
				Mar	15	4
				Apr	15	4
Water quality	Salts	Electrical conductivity (EC)		To achieve the category B, EC should be ≤55 mS/m		EC >55 mS/m
	Nutrients	Total Inorganic nitrogen (TIN)		To achieve the category B, TIN should be ≤0.75 mg/L		TIN >0.75 mg/L
		Orthophosphate (PO_4-P)		To achieve the category B, PO_4-P should be <0.015 mg/L		PO4-P >0.015 mg/L
	System variables	Dissolved oxygen		To achieve the category B, DO should be >7 mg/L		DO <7 mg/L
		pH		To achieve the category B, pH should be: 5th Percentile: 6.00 – 6.24 95th Percentile:8.37 – 8.69		5th Percentile: 6.24 – 6.46 95th Percentile:8.69 – 9.00
		Clarity / turbidity	Use on-site observations and expert opinion.	Aim for clarity to be approximately ≥45cm		-

Component	Sub- component	Indicator	RQO Narrative	RQO Numeric	TPC
		Water temperature	If no temperature data are available, use expert judgement and qualitative descriptions in temperature table to assign low confidence present state rating for temperature. To remain in a category B natural temperature range is measured or estimated from air temperature.	-	-
		TSS (WQGDSS Tool)		Any increase in TSS concentrations must be limited to <10 % of the background TSS concentrations at a specific site and time. TSS ≤16.0 mg/L	TSS >17.6 mg/L
	Pathogens	Faecal coliforms and *E. coli*		Meet targets for use in Table 6.3 detailing health risk guidelines	-
Habitat	Geomorphology	GAI score	Maintain or improve catchment drivers and site impacts	Maintain a GAI PES score of at least a 'C' or >62%	GAI PES score <62%
		Bank erosion	Maintain low to moderate proportion of banks actively eroding	Maintain bank erosion below 30% of riverbank length	Bank erosion of more than 30% of riverbank length
		Bed sediment size	Maintain dominant riffle sediment size to include gravel and cobble	Maintain riffle with mobile sediment in the range of a D50 of 52 mm, D16 of 18 mm and D84 of 100 mm	Riffle dominated by sand or only cobble
		Embeddedness	Maintain low embeddedness of riffle sediment	Maintain embeddedness of <25% for riffle sediment	Embeddedness levels of >25% for 25% of riffle area/sampling points
		Pool depth	Maintain upstream pool with deep open water	Maintain upstream pool with water >0.5 m deep for >60% of pool area	Upstream pool is >60% filled with sediment and forming largely shallow habitat
		Floodbench	Maintain flood benches along at least one of the banks	Maintain flood bench of >5 m wide along at least one bank with signs of recent fine sediment deposition	Channel erosion to the extent where there are no benches wider than ~ 5 m and no signs of recent fine sediment deposition on the benches
Habitat: Riparian Vegetation	Marginal zone	Dominant vegetation	Non-woody vegetation should dominate the marginal zone, but with a small woody component	Non-woody cover >= 25% (aerial cover).	Non-woody cover <30% (aerial cover).
				5% >= Woody cover <= 30% (aerial cover).	Woody cover absent or >25% (aerial cover).
		Key species	*Miscanthus ecklonii, Cyperus dives, Salix mucronata* and *Gomphostigma virgatum* should be present	4 listed species present.	*Miscanthus ecklonii, Cyperus dives, Salix mucronata* or *Gomphostigma virgatum* absent
		Alien plant species	The riparian vegetation structure and composition in the marginal zone should maintain desired dominance and non-dominance, with limited or no encroachment by alien or terrestrial species.	Perennial alien plants absent	Perennial alien plants present
		Terrestrial woody cover		Terrestrial woody plants absent	Terrestrial woody plants present
		Reed cover		Reeds absent	Reeds present
	Non-marginal (lower - flood bench)	Dominant vegetation	Non-woody vegetation should dominate the flood benches	Non-woody cover >= 40% (aerial cover).	Non-woody cover <65% (aerial cover).
				5% >= Woody cover <= 40% (aerial cover).	Woody cover absent or >35% (aerial cover).

Component	Sub- component	Indicator	RQO Narrative	RQO Numeric	TPC
		Key species	*Miscanthus ecklonii, Cynodon dactylon* and *Hemarthria altissima* should be present.	3 listed species present.	*Miscanthus ecklonii, Cynodon dactylon* or *Hemarthria altissima* absent
		Alien plant species	The riparian vegetation structure and composition on the flood benches should maintain desired dominance and non-dominance, with limited or no encroachment by alien or terrestrial species.	Perennial alien plant species <= 10% (aerial cover).	Perennial alien plant species >5% (aerial cover).
		Terrestrial woody cover		Terrestrial woody cover <= 10% (aerial cover).	Terrestrial woody cover >5% (aerial cover).
	Non-marginal (upper - banks)	Dominant vegetation	Indigenous woody vegetation should remain dominant along the banks	Woody cover >= 20% (aerial cover).	Woody cover <25% (aerial cover).
		Key species	*Vachellia karroo, Ziziphus mucronata, Ficus sur* and *Combretum caffrum* should be present	4 listed species present.	*Vachellia karroo, Ziziphus mucronata, Ficus sur* or *Combretum caffrum* absent
		Alien plant species	Encroachment by alien species should be kept in check	Perennial alien plant species <= 50% (aerial cover).	Perennial alien plant species >40% (aerial cover).
	Riparian zone	PES	The PES category should be a D at least	VEGRAI score >= 42%	VEGRAI score <50%
		Species richness	Indigenous plant species richness in the riparian zone should be maintained.	>= 14 indigenous species.	<14 indigenous species.
		Endemic riparian species	*Combretum caffrum* endemic to South Africa, should remain present	1 listed endemic species present.	Absence of Combretum caffrum
Biota	Fish	FRAI score	The Ecological Category should be maintained at a Category C or greater.	FRAI score ≥62%	FRAI score <65%
		Overall fish health	To ensure fish population recorded is in good health with no prevelance of dlsease and/or anomalies.	<2% of fish population with externally evident disease or other anomalies. Parasite infestation to be noted but not used in this assessment of anomalies.	>2% of fish population with externally evident disease or other anomalies.
		Key species	To ensure flows (including flooding events) and habitats allow for migration and presence of catadromous species	At least two (2) Anguilla species present on two or more consecutive surveys.	<2 *Anguilla spp.* present on two or more consecutive surveys
	Macroinvertebrates	MIRAI Category and Score	The Ecological Category should be maintained within a C Category.	MIRAI score ≥62%	MIRAI score <64%
		SASS5 Total Score and ASPT	To ensure that the SASS scores attained, support the specified Ecological Category.	To ensure that the SASS5 scores and ASPT values occur in the following range: SASS5 score: >85; ASPT value: >6.0	SASS5 score: <87 and ASPT: <6.2
		Key taxa and abundance	To maintain suitable flow velocity (>0.6m/s) and to maintain clean, unembedded surface area (cobbles) to support the following flow-dependent taxa:		
			Heptageniidae	Minimum abundance of an A attained.	If Heptageniidae is missing in two consecutive surveys or has a single individual present in two consecutive surveys. Velocities decrease below 0.6m/s for longer than a week, water quality deterioration and SIC become exposed.

Component	Sub- component	Indicator	RQO Narrative	RQO Numeric	TPC
			Baetidae >2sp	Minimum abundance of an A attained.	If Baetidae >2sp is missing in two consecutive surveys or has a single individual present in two consecutive surveys. Velocities decrease below 0.6m/s for longer than a week, water quality deterioration and biotopes become exposed.
			Leptophlebiidae	Minimum abundance of an A attained.	If Leptophlebiidae is missing in two consecutive surveys or has a single individual present in two consecutive surveys. Velocities decrease below 0.3m/s for longer than a week, water quality deterioration and SIC become exposed.
			To maintain sufficient quantity and quality of inundated vegetation to support the following vegetation-dwelling taxon (also which have a preference for cobbles):		
			Paleomonidae	Minimum abundance of an A attained.	If Paleomonidae is missing in two consecutive surveys or has a single individual present in two consecutive surveys. Water quality deterioration and marginal vegetation and stems (and cobbles) become exposed.
		Taxon dominance	Ensure that no family dominates the macroinvertebrate assemblage.	Ensure that no family dominates the macroinvertebrate assemblage, defined as D (>1000) abundance for more than two consecutive surveys.	Any taxon occurring in an abundance of >100 for two consecutive surveys.
	Diatoms	SPI score and Category	The Ecological Category should be maintained at a Category B or greater.	SPI Score ≥13.3	SPI Score: <14.4

Table 3: Draft RQOs for priority dam RU in IUA_T03 (Mthatha Dam)

Component	Sub- component	Indicator	RQO Narrative	RQO Numeric	TPC
Priority Dam: 18.3 Mthatha Dam					
Quantity	Dam operations and levels	Minimal operating level required in the dam	Update and review operation of the dam to sustain optimal dam levels to support users and protect downstream aquatic ecosystems (Mthatha River and Estuary).		
	System (dam) operating rules	Operating rules	Update and review operating rules of the dam, including hydro power releases to protect aquatic ecosystems downstream.		
	Reduction in live storage	Current dam volume and increased sedimentation; bathymetric survey	Monitor levels of sedimentation in the dam	Should not change by ≥5% over a 5 year period	Observation of levels of sedimentation in the dam
Quality	Clarity/ Secchi Disc Indication	Secchi Disk Indication	Maintain system to ensure increase in clarity - broad indication of eutrophication	No data. Aim for ≥50cm	
Vegetation	In-channel Phragmites sp./reeds	Dense reeds	Reed infestation indicative of a response to limited flow / lack of releases through the system.	70 - 80% of the channel width must be retained as an open channel with no encroachment from *Phragmites sp.* and *Arundo donax* (Spanish Reed)	Dense reed infestation establishing needs to be noted

Table 4: Draft RQOs for priority estuary RU in IUA_T03 (Mtata Estuary)

NAME	Mtata	Estuary Type	Predominantly Open
PES:	C	REC	B/C
Trajectory	↓	TEC	B/C

The following interventions will result in halting the negative trajectory and achieving TEC:

- Restore/protect base flows and floods
- Manage agricultural runoff (e.g. fertilizing, buffer zones)
- Rehabilitate riparian areas/ wetlands
- Remove alien vegetation
- Implement cattle exclusion zone (browsing of mangroves)
- Control mangrove harvesting
- Manage/reduce fishing pressure/ bait collection
- Investigate eradication of alien fish
- Restore/protect against impact from mining

Component/ indicator	Target EC	Description	Numerical RQO	Narrative RQO
Hydrology	C	nMAR	392	
		% nMAR	81	
Hydrodynamics	A	Maintain hydrodynamics regime appropriate for dependent biotic components of TEC category:	≥93	
		Mouth 100% open	100	
Water Quality: Salinity	B	Maintain salinity regime appropriate for dependent biotic components of TEC category:	≥88	
		Salinity	0-35	
Water Quality: General	↓ D	Maintain Water quality appropriate for dependent biotic components of TEC category:	≥58	
		Estuary: Average Dissolved Oxygen (mg/l)	>5	
		Estuary: pH	7.5<>8.5	
		Estuary: Turbidity (NTU) (should decrease with increasing salinity)	<50 (low flows)	
		River: Median Dissolved inorganic nitrogen (DIN) (mg/l)	≤0.2	
		River: Median Dissolved inorganic phosphate (DIP) (mg/l)	≤0.02	
		Metal and agrochemical concentrations in estuary exceed target values as per SA Water Quality Guidelines for coastal marine waters (DWAF, 1995 or future updates) or where not available as per Quality Guidelines for the Western Indian Ocean (e.g. UNEP et al. 2022)		=
		Pesticides/herbicides (marine water quality guidelines, e.g. Nairobi Convention Secretariat and CSIR, 2009 or official future updates thereof)		=
		Recreational use areas in estuary (DEA, 2012)	Enterococci < 185 counts per 100 ml (90%ile) and E. coli < 500 counts per 100 ml (90%ile).	
Physical habitat	↓ C	Maintain Physical habitat appropriate for dependent biotic components of TEC category:	≥63	
		River: Suspended sediment concentration deviates by <20 % (sediment load-discharge relationship to be determined as part of baseline studies)		=
		Estuary: Changes in sediment deposition and erosion patterns in the estuary <0.25 m (bathymetric & topographic surveys)		=
		Estuary: Sand/mud distribution change by < 20% from Present State (2025).		=

Microalgae	**↓ C**	Maintain the composition, richness, and abundance of phytoplankton and benthic microalgal assemblages of TEC category:	≥63	
		Phytoplankton biomass (µg/ℓ) for 90th %ile (entire estuary)	<10	
		Average benthic microalgae biomass (mg/m2) (entire estuary)	<75	
		Average benthic diatom diversity (H') (entire estuary)	>2.5	
		No presence of bloom conditions (> 20 µg Chl-*a* l^{-1}), with the exception of 'natural' blooms that occur within weeks of freshwater pulse/flood events during increased water residency periods	0	
		Presence of potentially HAB-forming taxa	0	
Macrophytes	**↓ C**	Maintain macrophyte composition representatives of a Target EC:	≥63	
		< % change in composition, distribution & abundance of macrophyte habitats	10	
		Mangrove extent (ha) maintained, with canopy intact, no stumps & seedlings present	29.3	
		Sediment pH maintained in mangrove areas	7.0	
		Maintain salt marsh integrity (no/limited evidence of trampling and overgrazing)		=
		No invasive alien vegetation in EFZ		=
		Protect/Maintain riparian zone integrity - buffer sediment & nutrient input from adjacent land based activities.		=
		No land conversion on the floodplain from Baseline (2024).		=
Invertebrates	**↓ D**	Maintain invertebrate composition, richness, and abundance representatives of a Target EC:	≥58	
		No significant reduction in zooplankton species richness and biomass annually	<10%	
		No significant reduction in zoobenthos species richness and biomass annually	<10%	
		No significant reduction in mud and/or sand prawn biomass (3yr period)	<10%	
		Annelids should not be dominant in sediment (entire estuary - 2 survey periods: <50% total species richness) (indication of poor water quality, anoxia/hypoxia)		=
		Presence & evidence of recruitment of mud crabs and mud prawns		=
Fish	**↓ D**	Maintain fish composition, richness, and abundance representatives of a Target EC:	≥58	
		Number of fish species	>=20	
		Number of species making up 90% of abundance	>=4	
		Juvenile predatory fish present (kob, grunter, steenbras, leervis)		=
		Soles and gobies throughout estuary		=
		Eels (e.g.Anguilla mossambica) present in estuary OR catchment in 2 or more consecutive surveys		=
Birds	**↓ C**	Maintain avifaunal community representatives of a Target EC:	≥63	
		No significant reduction in Piscivorous birds (cormorants and/or herons/egrets) (3 yr period), with change <%	<10%	
		No significant reduction in Wader species (3 yr period), with change <%	<10%	
		Waterfowl (ducks and geese) numbers stable (3 yr period), with change <%	<10%	
		Tern and gull (roost at mouth) numbers stable (3 yr period), with change <%	<10%	
		Palaearctic migrants present in summer (stable over 3 yr period), with change <%	<10%	
		Resident Fish Eagle breeding pair	≥1	
		Overall water bird community stable/consistent (3 yr period), with change <%	<10%	

Table 5: Draft RQOs for priority groundwater RU in IUA_T03 (*GW_RU45: T60A, T60B, T60C, T60D, T60E, T60F, T60G, T60H, T60J and T60K*)

GWRU	Quats	Component	Sub Component	Indicator/Measure	Narrative	Numerical
					IUA_T04	
GW_RU45	T60A T60B T60C T60D T60E T60F T60G T60H T60J T60K	Quantity and Aquifer	Abstraction	Allocations	Existing users to comply with allocation schedules including GA, Schedule 1, and licence conditions. New users is to remain within the allocable groundwater volume.	Q < Average recharge per hectare
			Stress	Abstraction and allocation	Currently not stressed.	Q < Current surplus
			Water Level	Time series drawdown in monitoring boreholes (monthly)	Drawdown in monitoring boreholes should not exceed peak drawdown or not exhibit declining trends over 5 years and exceed the 75th percentile drawdown.	peak drawdown < 1.2 m 75th percentile drawdown < 0.8 m
			Protection Zone	Other water users	The radius of influence should not intersect any other protection zone	-
		Quality	Quality	Time series water quality (Quarterly / Bi annual)		-
				Nutrients	long term trend should not exceed the 75th percentile or the TWQR for domestic use (in brackets) if higher for Compounds of Concern	NO3/NO2 < 2.7
				Salts		EC < 15 (70)
				Sulphates		SO4 < 3 (200)
				Other		Na < 13 (100) Cl < 11 (100) F < 0.2 (1) Pb < 0.028 (0.01)
		Ecological	Baseflow Component	Dry season flow	Protection zones for watercourses are required to protect the ecological reserve. Groundwater flow reversal to be prevented near water courses. Dry season flow not to exhibit declining trend for more than 5 years.	-

Table 5: Draft RQOs for priority wetland RU in IUA_T04 (W_RU25 – Ludeke Halt)

Type	REC/BAS		Component	Sub-Component	Indicator	RQO	Numerical Criteria
Seep/valley bottom	C/	D	Habitat	Ecological Condition	Desktop and field verified PES category based on a Level 1B WET-Health assessment undertaken for the Ludeke Halt wetland complex.	The PES of the Ludeke Halt wetland complex should not fall below the BAS – C/D category	Every 3-5 years, repeat the WET-Health Level 1B assessment carried out in this baseline assessment, which was based primarily on land-cover types in the wetland and the areas of influence in its catchment. This recommended monitoring comprises desktop detection of land-cover change in the wetland and its catchment, as well as at least 8 hours of field verification for each wetland. Specific factors that need to be assessed include: - No further expansion of residential or infrastructural developments such as sport fields, schools, etc, activities or other impinging land-uses into the remaining natural areas of the wetlands. - No additional water-reducing activities in the wetlands or their catchments - No further deterioration in the water quality component of the PES score of the wetlands. - No further canalisation/furrowing/diversion of the remaining intact areas of the wetland. - No further encroachment of IAPs should be permitted into the wetland and should not exceed 2.5%.

Type	REC/BAS	Component	Sub-Component	Indicator	RQO	Numerical Criteria
		Habitat	Wise-use	Extent of the subsistence farming lands in the wetland in relation to the extent recorded in the baseline assessment.	The extent and land use practices should be managed to ensure it does not increase above the extent mapped in the baseline assessment and that wise-use practices have been adopted to ensure the BAS – C/D category is maintained.	Explore options to institute wise-use subsistence farming and grazing practices in the wetlands to limit the impacts on the receiving environment and to maintain the ecological condition of the system. Existing guidelines such as WET-Sustainable Use (Kotze, 2010) can be used to assess the ecological sustainability of agricultural activities (cultivation, grazing, and vegetation harvesting) within the Cala wetland, as well as make useful and actionable recommendations for sustaining the use of this wetland ecosystem. Monitoring of the activities should be aligned with the WET-Health site visits.
		Habitat	Geomorphology	Extent to which headcut erosion has advanced within the wetland.	The headcut erosion within the wetland should not be allowed to progress any further upstream than where they were noted in the baseline assessment.	Although multiple erosional features exist within the wetland, none have actively advanced over recent years. However, they remain a potential threat to the wetland, particularly those that threaten intact wetland areas. If these erosion features were to advance, it is likely to result in direct habitat loss and desiccation of these wetland areas. The management and rehabilitation of these erosional features in the wetland would prevent the unnatural erosion and subsequent sedimentation within the wetland. As such, erosion control measures within the wetland must be explored. This could double as a local capacity building, awareness raising, and income generating project for the local community through a programme like Working for Wetlands

CONTACT INFORMATION

REPORTS: https://www.dws.gov.za/RDM/WRCS/kft.aspx

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