water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

2030 NDP
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)

DEVELOPMENT OF RESOURCE QUALITY OBJECTIVES

Rivers: Approach to RQO determination



Workshop: Development of Resource Quality Objectives

4.3 Rivers: Approach to RQO determination

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HIGH PRIORITIES RUS AND EWR SITES

W3 Secondary Catchment (Main River: Mkuze)					
W31-1	Mkuze	C	Flow, WQ, Non-flow	3	Linked to EWR MK1
W31-2	Mkuze	B		3	Linked to EWR MK1
W31-3	Mkuze	B/C	Flow, WQ, Non-flow	4	Linked to EWR MK1
W31-4	Mkuze	B		4	Linked to EWR MK1
W31-5	Mkuze	C	Flow, WQ, Non-flow	3	EWR MK1
W32_1	Mkuze	B/C	Flow, Non-flow	4	Linked to EWR MK1
W32-6	Munywana	B		4	Linked to St Lucia
W4 Secondary Catchment (Main River: Pongola - excluding Eswatini)					
W42-2	Phongolo	C	Flow (WQ Non-flow)	2	EWR UP1
W45-1	Phongolo	C	Flow, Non-flow (wq)	4	Linked to EWR UP1
W5 Secondary Catchment (Main River: Usutu - excluding Eswatini)					
W51-2	Assegaai	C	Flow, Non-flow	4	Linked to EWR AS1
W51-3	Assegaai	B/C	Flow, Non-flow (WQ)	4	EWR AS1
W53-2	Mpama	B/C	Flow, Non-flow	4	IUCMA?
W54-1	uSuthu	B		4	IUCMA?
W57-1	uSuthu	B/C	Flow	4	Linked to pans and floodplains (

GEOMORPHOLOGY

- Based on desktop studies of Google Earth & data collected during site visits. Qualitative observation based on walking the site.
- Bed sediment: No quantitative measurements taken, no data available from 2014. Qualitative scale used – eg negligible (<5%)
- Channel cross section: Surveyed sections available. EcoSpec provided in terms of the channel width between edge of the upper flood zone (assumed edge of the active channel)

GEOMORPHOLOGY

- Flood Benches: Presence or absence of indicator benches and extent of fine sediment deposits.
- Channel Pattern: Classified at the reach scale from aerial imagery and the site visit according to categories given in the GAI.

RIPARIAN VEGETATION

- Dominant vegetation cover: Key component of the structure and function of the riparian zone as a whole, but also to subzone.
- Invasion of the riparian zone by alien species: Acceptance levels (%aerial cover) of perennial alien species are provided in the riparian zone or a sub-zone – linked to ecological category.
- Terrestrialisation: Degree of terrestrialisation (woody species) in the different riparian zones

RIPARIAN VEGETATION

- Vegetation structure: Relative proportions of riparian and terrestrial woody species, reeds and non-woody species, including grasses, sedges and forbs as well as open unvegetated areas. Expressed as aerial cover, density, abundance or population structure.
- Riparian plant endemism: Presence of endemic species.
- Threatened riparian species: If species with a certain IUCN status occur, RQOs highlight the presence and protection of these species'
- Riparian taxon richness: RQOs highlight the maintenance of baseline species richness or specific key riparian species.

FISH

- EcoSpecs and TPCs based on the FROC of fish species within the EWR reach.
- Metric specific: Use specific indicator species / groups to provide insight into the potential aspects of concern (loss of velocity-depth habitats, vegetative cover, impacts by alien species or migratory impacts). Different metrics used include aspects such as ecological status, species richness, requirements for specific habitat features and unmodified water quality, migratory requirements, presence of alien species.

MACROINVERTEBRATES

- Indicator taxa were selected using the taxa preference data in the MIRAI.
- SASS5 and MIRAI scores used to integrate habitat parameters and can be translated into EcoSpecs.