

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

Background Information Document

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water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

PURPOSE OF THIS DOCUMENT

The purpose of this background information document (BID) is to inform stakeholders about the study that will determine Water Resource Classes, Reserve and Resource Quality Objectives (RQOs) for rivers, groundwater, wetlands and estuaries in the Keiskamma and Fish to Tsitsikamma catchments within the Mzimvubu to Tsitsikamma Water Management Area (WMA7), excluding the Mzimvubu River, within the Eastern Cape Province and some parts of the Western Cape Province.

This document aims to provide stakeholders with information on the process to be followed for determining the classes, Reserve and RQOs. Stakeholder engagement plays a vital role in this process, and stakeholders are invited to participate by contributing information at workshops, commenting on study reports, or by corresponding with the stakeholder engagement or technical teams:

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BACKGROUND TO THE PROJECT

The Department of Water and Sanitation, through the Chief Directorate: Water Ecosystems Management (CD: WEM) has commissioned this study to determine the water resource classes, Reserve and associated Resource Quality Objectives (RQOs) for all significant water resources in the Keiskamma and Fish to Tsitsikamma catchments in terms of Section 13 and Section 16 of the National Water Act, 1998 (Act 36 of 1998).

The aim of determining these three protection measures is to facilitate an appropriate balance between the use of water resources and the protection thereof. The water resource components included in this study are rivers, dams, wetlands, groundwater, and estuaries.

The proposed study will adopt the approach and methodology as prescribed by the Regulations for the Establishment of a Water Resource Classification System (WRCS) as per Regulation 810 (Government Gazette 33541) dated 17 September 2010. The WRCS outlines the steps to be followed for determining the class, Reserve and Resource Quality Objectives (RQOs). Furthermore, the integrated steps (8-steps) as developed through the 'Development of Procedures to operationalise Resource Directed Measures (DWS, 2017)' will be used to guide the various activities (see diagram of integrated framework in following section).

The National Water Act, 1998 (Act 36 of 1998) herein referred to as NWA is founded on the principle that the National Government has overall responsibility for and authority over water resource management for the benefit of the public. It also requires that the nation's water resources be protected, used, developed, conserved, managed, and controlled in an equitable, efficient, and sustainable manner. To achieve this objective, Chapter 3 of the NWA provides for the protection of water resources through the implementation of Resource Directed Measures (RDM).

This classification process is a consultative process that requires stakeholders to participate in the setting of the class. According to the NWA, once the WRCS has been gazetted, all significant water resources must be classified. The outcome of the classification process will be the approval of the water resource classes by the Minister which will be binding on all authorities or institutions.

STUDY TIME FRAME

The duration of the study is 36 months, starting from October 2021.

THE STUDY APPROACH

This study focuses on the classification of significant water resources (rivers, wetlands, groundwater and the estuaries) and determining of the Reserve and associated RQOs.

- The process begins by using the WRCS approach to undertake a detailed status quo assessment of the catchment (water resource quality, water resource issues, existing monitoring programmes, infrastructure, institutional environment, socio-economics, sectoral water uses and users) is undertaken to understand the current conditions;
- The catchment is then delineated into integrated units of analysis (IUAs), where the catchment area is divided into basic units of assessment for the classification of water resources and into resource units (smaller units) for determining the Reserve and RQOs;
- A process of modelling, taking into account the protection requirements and development demands, is undertaken to understand consequences of different scenarios for the future management of an Integrated Unit of Analysis (IUA);
- A consultative process will then be undertaken, whereby the outcomes of the scenario analysis are discussed, taking into account the ecological, social and economic aspects, to define a future desired state of a water resource, namely the water resource class;
- RQOs are then determined to ensure that the water resource classes set, can be met; and
- Once the consultation on the proposed classes and RQOs are complete, the Draft Legal Notice containing the Water Resource Classes and associated RQOs will be provided for public comment for a period of 60 days and subsequently gazetted. The Reserve will only be gazetted once the Classes and RQOs are gazetted.

Why do we need to classify water resources?

The determination of a class for a water resource represents the first stage in the protection and management process of a water resource.

What is a water resource class?

A water resource class, which will range from minimally used to heavily used, essentially describes the desired condition of the resource, along with the degree to which it can be utilised. The water resource classes are:

- ✓ **Class I** water resource is one which is minimally used, and the overall ecological condition of that water resource is minimally altered from its predevelopment condition.
- ✓ **Class II** water resource is one which is moderately used, and the overall ecological condition of that water resource is moderately altered from its predevelopment condition.
- ✓ **Class III** water resource is one which is heavily used, and the overall ecological condition of that water resource is significantly altered from its predevelopment condition.

What are the outcomes of the classification process?

The classification process results in the development of:

- Water Resource Classes: Class I, II, or III;
- The Reserve; and
- A set RQOs.

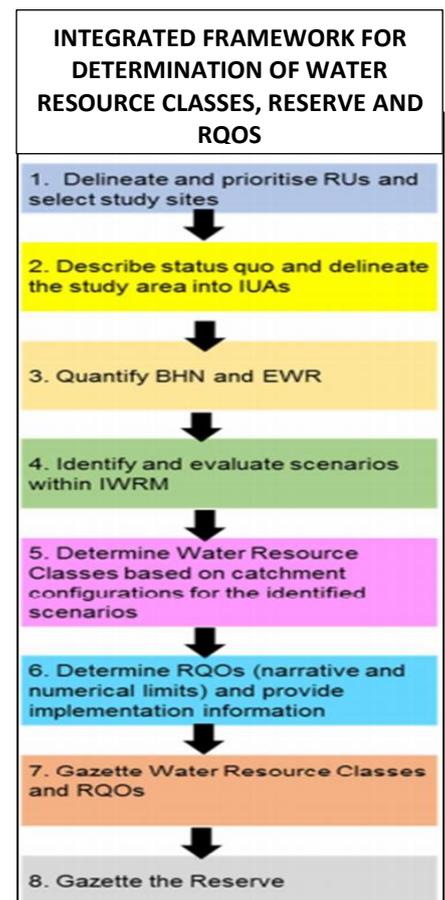
To determine the water resource class, steps 1 to 7 of the Integrated Framework result in the identification of a set of desired characteristics for each of the prioritized water resources (rivers, groundwater, wetlands and estuaries) within the focus catchments.

What is the Reserve?

According to the NWA, the Reserve is the quantity and quality of water required to satisfy basic human needs and to protect aquatic ecosystems, in order to secure ecological sustainable management of significant water resources. The Reserve, therefore, consists of two distinct components: (1) basic human needs and (2) the Ecological Water Requirements, (EWRs). The basic human needs provide for the essential needs of people that are dependent on the water resource for their livelihood and who are not supplied with water through formal reticulation systems. The ecological component of the Reserve (EWR) relates to the quantity, quality and variable flow of water required to protect the aquatic ecosystem of the water resource.

What are Resource Quality Objectives (RQOs)?

The RQOs are a set of narrative and/or numerical management objectives defined for any particular resource, once the class is determined. RQOs encompass four components of the resource namely: Water quantity; Water quality; Habitat integrity; and Biotic characteristics. RQOs are important management objectives against which resource monitoring will be assessed and form important sustainability indicators for water resource management.



OVERVIEW OF THE STUDY AREA

The catchments of the study area (Figure 1) are amongst numerous water stressed catchments in South Africa. These areas are important for conservation and have recognised protected areas, natural heritage, cultural and historical sites, as well as other conservation areas that require protection and for associated increased demand from and by eco-tourism activities. As a number of the rivers and estuaries are within these pristine catchments with no major impacts, it is vital that their ecological importance is retained. However, looming agricultural and subsequently erosion and other associated pressures, and industrial practices are on the rise in these catchments. Furthermore, various water-use license applications and increasing land use impacts in the adjacent catchments (forestry, farming, eradication of alien vegetation, wastewater treatment works) are increasing. Therefore, measures including the Classification, quantification of the Reserve and setting of RQOs for all identified water resources considered to be significant within these catchments, is required to be determined to ensure ecological sustainability within these catchments. The following major rivers, wetlands, estuaries and groundwater areas have been identified within the study area, covering a total catchment area of more than 143 000 km².

Rivers:

- (i) Great Kei River (drainage region S), with its main tributaries of the Black Kei River (S31, S32), White Kei River (S10A to S10J), with its tributary, the Indwe River (S20A to S20D), the Tsomo River (S50A to S50H), and the Thomas River (S40A to S40E), Kubusi River (S60A to S60E) and Xilinx River (S70C to S70E);
- (ii) Mbashe River (part of drainage region T and includes T11, T12 and T13);
- (iii) Great Fish (drainage region Q) with its main tributaries of the Tarka, Little Fish, Koonap and Kat Rivers;
- (iv) Sundays (drainage region N) which falls mainly in the Great Karoo; and
- (v) Gamtoos River (drainage region L) situated in the Karoo, with its major tributaries, namely Groot, Baviaanskloof and Kouga Rivers.

The smaller drainage regions include the following:

- Mthatha River (drainage region T20),
- Small coastal rivers in the Pondoland area (drainage regions T60 to T90) with estuaries of high conservation value,
- Keiskamma, Buffalo, Nahoon and Gqunube Rivers (drainage region R, also known as the Amatole System),
- Kowie, Kariega and Boesmans Rivers (drainage region P or Albany Coast),
- Koega and Swartkops Rivers (drainage region M, part of the Algoa System),
- Krom and Seekoei Rivers (drainage region K90, also part of Algoa System), and
- Tsitsikamma and small coastal rivers in drainage region K80.

Wetlands: The Mzivubu-Tsitsikamma (West) catchment has a high number of categorized National Freshwater Ecosystem Priority Areas (NFEPA). Through an intensive desktop review of existing prioritisation layers, wetland inventories, and stakeholder engagements, additional wetlands of conservation importance will be identified and prioritised for ongoing conservation and protection.

Estuaries: The study area incorporates a vast number of estuaries with 155 of these between the Mtentwana, immediately south of the Mtamvuna which forms the southern boundary of KwaZulu-Natal, and the Lottering, east of Plettenberg Bay. The frequency of estuaries per kilometer of coastline begins to increase to the east and north of East London.

The latest National Biodiversity Assessment (2018) indicated that the stretch of coast between East London and the Mtentwana incorporates the greatest number of highly ranked estuaries in the country. Those ranked having an ecological category of C (moderately modified) make up 17% while the remaining 83% are ranked in either an A or B category (largely natural). There are a variety of estuarine types in the study area with a dominance of Small to Large Temporarily Closed Estuaries with a few Predominantly Open estuaries and also a few rare estuary types such as those in the Waterfall Outlet Category.

Groundwater: Groundwater resources within the study area are mainly linked with the Cape Supergroup and Karoo Supergroup aquifers. The area from Mzimvubu to Keiskamma is mainly covered with Karoo Supergroup sediments whilst the Fish to Tsitsikamma area is covered with Cape Supergroup, Karoo Supergroup, as well as Suurberg and Uitenhage Groups. Borehole yields vary greatly depending on the lithological unit intersected during drilling and the arenaceous: argillaceous ratio within the respective lithological units.

- **Mzimvubu to Keiskamma:** Groundwater is mainly used for rural domestic purposes and stock watering as well as for supplies to towns and rural settlements. Substantial irrigation from groundwater is practiced in the vicinity of Queenstown, where some over-exploitation of groundwater is also experienced. The quality of groundwater is generally of a high standard. However, water of high salinity is found along part of the coast and at some inland locations where the rainfall is low and the geology is not favorable.
- **Fish to Tsitsikamma:** Groundwater is used for municipal, rural settlements, rural domestic and stock watering purposes. Towns in the Karoo region generally have a greater dependence on groundwater with some towns almost entirely dependent on groundwater for their existence. Recent exploration of groundwater in the Nelson Mandela Bay Municipality in particular is to supplement the diminishing surface water supplies in the region caused by a decline in rainfall. Groundwater quality is generally good with minor treatment required at municipal level.

STAKEHOLDER ENGAGEMENT AND PARTICIPATION

This study will be supported by comprehensive stakeholder engagement throughout the project cycle and is aligned to the technical steps of the study. Stakeholder Engagement is key in this process to ensure:

- Improvement in the management process of the project;
- Consensus and reduce the potential for future conflict; and
- The Department and Stakeholders share knowledge and expertise as well as understand each other's roles and responsibilities.

Stakeholders representing various relevant interests and sectors of society, as well as organs of state in the catchment, form part of the process and are invited to participate.

It is the intention of DWS that stakeholders oversee the classification of water resources and determination of RQOs, provide input, comment and guidance, as well as communicate the key outcomes of the study to their constituencies and communities.

Regular communication and consultation with stakeholders will be undertaken over the course of the study. Stakeholders and interested and affected parties (I&APs) are encouraged to participate.

Identification of stakeholders

The identification of stakeholders will be an ongoing process. Stakeholders that have currently been identified include relevant government departments on national, provincial and local level; agriculture (irrigation boards/water user associations, national and local agricultural unions); industry; conservation organisations; parastatals, community representatives and civil society. As a stakeholder, you are encouraged to inform the stakeholder engagement office of other stakeholders interested in the study.

Study Announcement

The study will be announced through a letter of invitation addressed to all I&APs currently on the database, accompanied by this BID and a reply sheet for I&APs to register for participation. An advert will further be placed in the Star Newspaper informing stakeholders of the public meeting.

Public Meetings

Two (2) separate rounds, each round encompassing public meetings in two key locations, will be scheduled for this study. The first round will be to introduce the study to the stakeholders, the second round will be to present the findings/results.

Ongoing Consultation with Stakeholders

Stakeholders will continue to be informed of progress with the study through further BIDs and will be asked for their inputs on an ongoing basis. The DWS website will also be used to publish information regarding this study, at:

<https://www.dws.gov.za/RDM/WRCS/default.aspx>

Project Steering Committee

Key stakeholders nominated will be invited by DWS to serve on a Project Steering Committee (PSC) for the duration of this project. The PSC members will act as stakeholder representatives that will oversee the classification process and provide strategic advice and guidance.

CONSENT TO PROCESS PERSONAL INFORMATION IN TERMS OF THE PROTECTION OF PERSONAL INFORMATION ACT, 4 OF 2013 (POPIA)

As part of the study, stakeholders' comments will need to be publicly documented as regulated by the Personal Information Act 4 of 2013, (POPIA) read with Cybercrimes Act 19 of 2020 and Electronic Communications and Transactions Act 25 of 2002. The Acts regulate and control the collection, use, and transfer of a person's personal information.

The collection of personal information will be based on the following principles aligned with the Act:

- Stakeholders will be informed that participation in the stakeholder engagement process is voluntary and based on receipt of their consent;
- Attendance registers and meeting records will not be shared beyond the project management team;
- All stakeholder information and data featured in reports and related outputs will be de-identified (so that it cannot be associated with particular groups or individuals);
- Personal data that is collected (e.g. attendance registers) will be protected.

DEFINITIONS

- **Ecological Water Requirements (EWR):**
The flow patterns (magnitude, timing and duration) and water quality needed to maintain a riverine ecosystem in a particular condition. This term is used to refer to both the quantity and quality components.
- **Resource Units (RU):**
Sections of a river that have the same natural flow patterns and reactions to stress, similar biophysical and geographic features. Each section has its own specification of EWRs.
- **Integrated Units of Analysis (IUA):**
IUAs are homogenous areas and broader scale spatial units with defined significant water resources of which can be managed as an entity. These units of assessment are for the classification of water resources (resource classes) which must be managed accordingly.

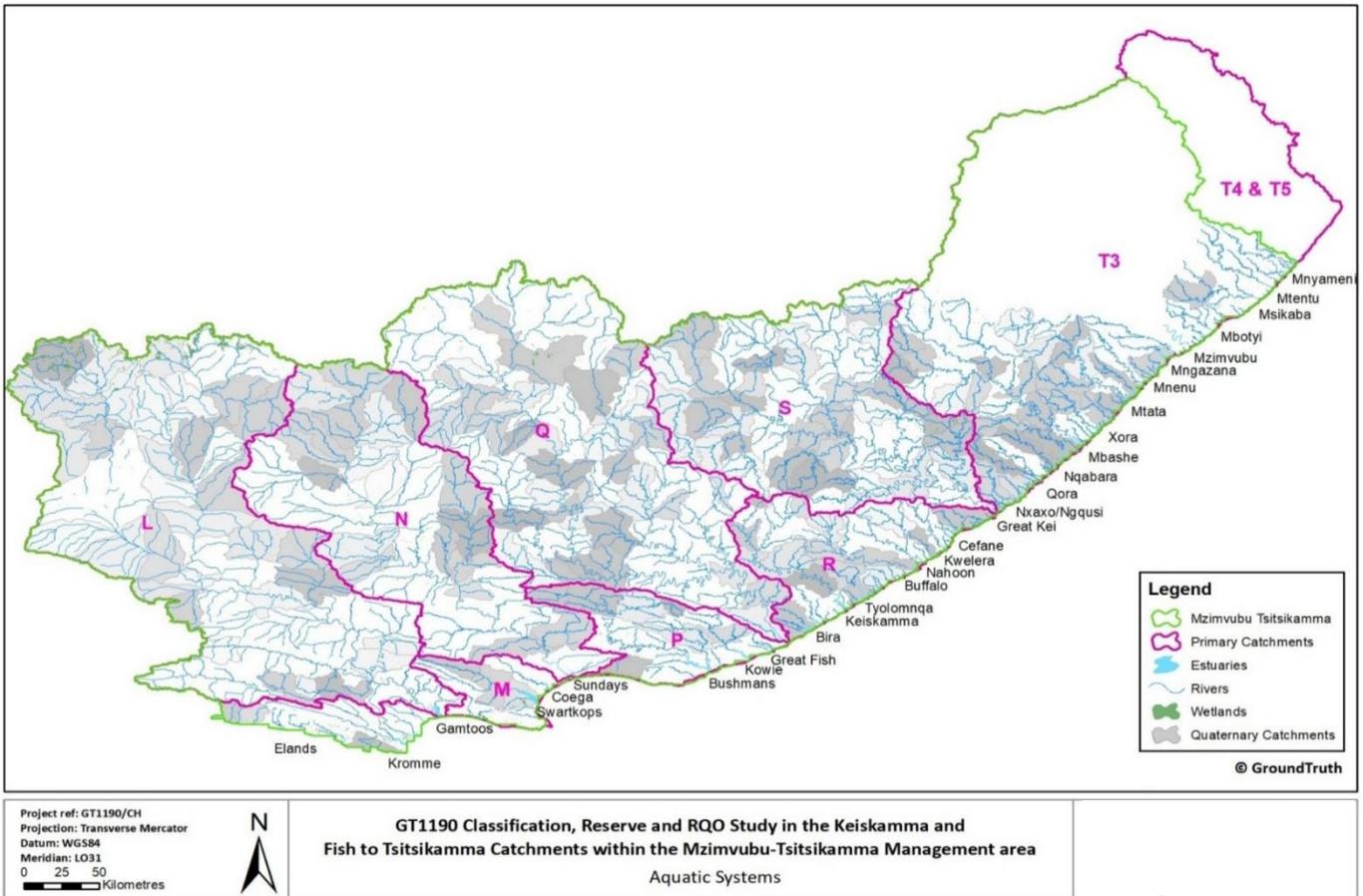


Figure 1: Aquatic systems in the Keiskamma, Fish to Tsitsikamma study area

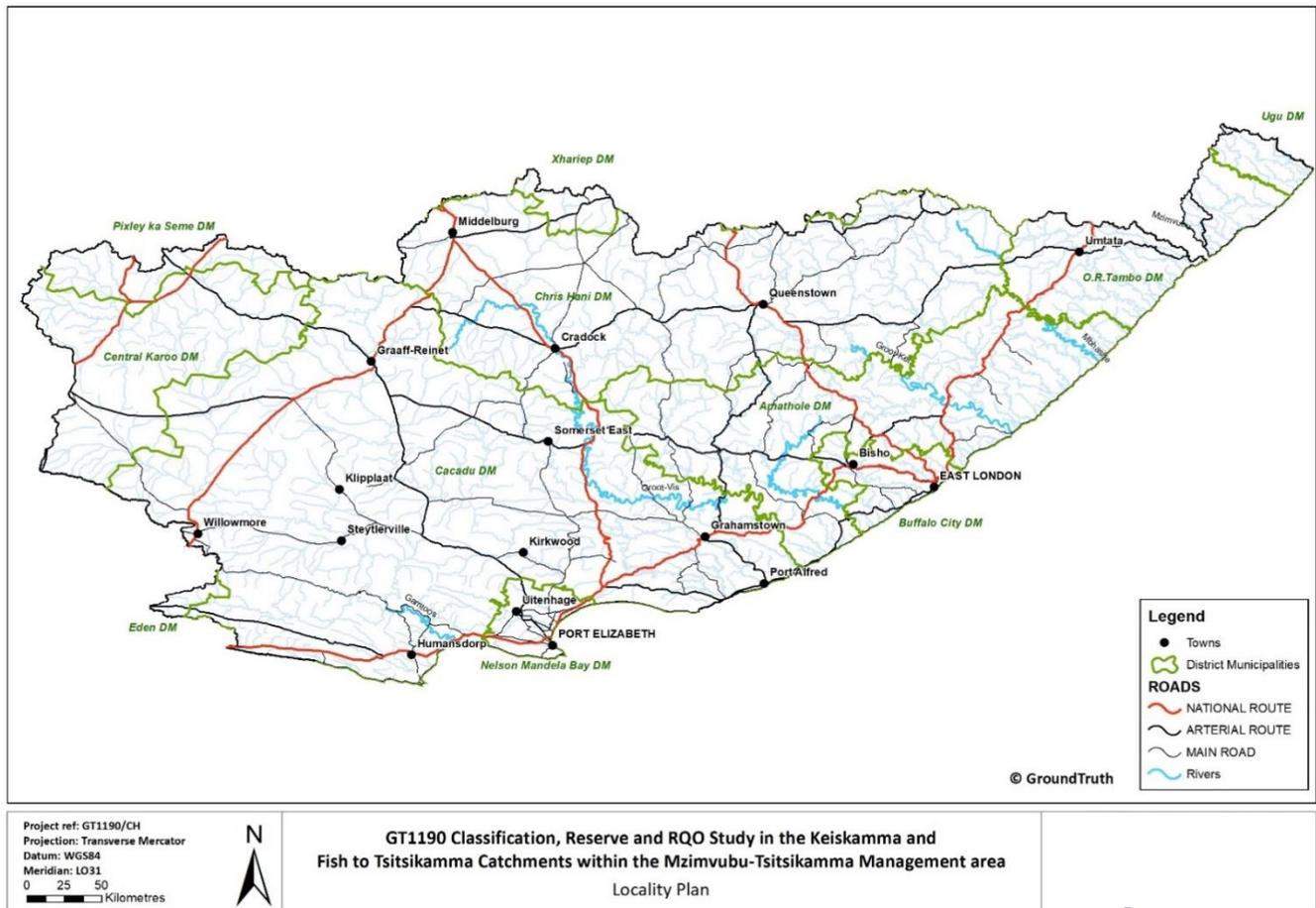


Figure 2: Locality plan for the Keiskamma, Fish to Tsitsikamma study area