

# RESERVE DETERMINATION STUDY FOR SELECTED SURFACE WATER, GROUNDWATER, ESTUARIES AND WETLANDS IN THE F60 AND G30 CATCHMENTS WITHIN THE BERG-OLIFANTS WMA

**BACKGROUND INFORMATION DOCUMENT**  
**March 2023**



## **Purpose of this Document**

This Background Information Document (BID) is to inform the Project Steering Committee (PSC) members about the Reserve Determination study that has been initiated for selected surface water, groundwater, estuaries and wetlands in the F60 and G30 catchments within the Berg-Olifants Water Management Area.

## **Introduction**

The National Water Act (Act No. 36 of 1998) (NWA) is founded on the principle that National Government has the overall responsibility for, and authority over water resource management for the benefit of the public, without seriously affecting the functioning or integrity of the natural water resources. To achieve this objective, Chapter 3 of the NWA provides for the protection of water resources i.e. groundwater and surface water resources, through the determination and implementation of the Reserve.

A study has been commissioned by the Department of Water and Sanitation (DWS) to determine the Reserve for selected surface water, groundwater, estuaries, and wetlands in the F60 and G30 catchments within the Berg-Olifants Water Management Area. This study is an extension to various studies already undertaken for the area that includes a low confidence groundwater and surface water reserve for the Sandveld

completed in 2005, proposed water resources classes for the catchments of the Olifants-Doorn Water Management Area, gazetted by the DWS in 2014, and determination of Resource Quality Objectives (RQOs) for the Olifants-Doorn WMA, completed in 2013. This study is to address in particular gaps in the previous studies where some significant water resources have not been assessed at the appropriate level of confidence or which has been overseen due to a lack of data at the time. An emphasis of the study is on the Verlorenvlei Estuary, a proclaimed RAMSAR site, and its associated water resources.

Essential to the project is the establishment of a Project Steering Committee (PSC) that is representative of the relevant sectors that have a role to play in the management, use, control and, most importantly, the protection and conservation of the water resources within the study area. Various active current forums such as the Verlorenvlei Inter-Governmental Task Team and the Verlorenvlei Estuary Management Forum have already been identified and were brought in during the Inception phase of the project.

## **What is the PSC?**

The PSC is typically a voluntary body operating at a strategic level, and which represents a body of interested and affected parties, affiliated to a specific discipline that could assist with the technical aspects of the study, assist with information available and to obtain outstanding information. Further to this, PSC can assist in reviewing technical aspects of the study, ensure transparency, avoid duplication of effort and aid in establishing an open, consultative, and co-operative governance approach.

## Background to the Reserve Determination Study

During the public commenting period for the gazetting phase of the Reserve for the Olifants-Doorn Catchments (Government Gazette no: 40785, dated 13 April 2017), and as stated above, concerns were raised that some high conservation value water resources in the F60 and G30 catchments were not covered at a sufficiently high level of confidence. More specifically, concerns were raised that the Verlorenvlei catchment, with its proclaimed RAMSAR site, may not currently have the level of protection as per the requirements listed by the RAMSAR convention agreement that South Africa is a signatory to.

Bearing in mind, that when the initial Reserve, classification and RQO studies for the area were undertaken, they were of the first studies of this nature to be completed after the proclamation of the NWA, and methods were still being developed and tested. Since the completion of the initial studies, methods related to water resource protection have been tested and scientifically validated. In addition, several studies, initiated by other organs of state, provincial and local government, and other tertiary institutions, have also been initiated various studies and given rise to the establishment of the very active and useful forum and technical task teams that now exist to address various aspects in the study area.

Given the above, the Directorate: Reserve Determination initiated a study to determine the Reserve for selected surface (rivers, estuaries and wetlands) and groundwater resources in the F60 and G30 catchments.

### Water Resource Protection and the Reserve

The protection of water resources is achieved through the implementation of **Resource Directed Measures** which includes the classification of water resources, setting the Reserve and Resource Quality Objectives.

Water resources are categorised according to specific **Water Resource Classes** that represent a management vision of a particular catchment, by taking into account the current state of the water resource and defining the ecological, social and economic aspects that are dependent on the resource.

**Resource Quality Objectives** (RQOs) are numerical and/or narrative descriptive statements of conditions which should be met in the receiving water resources in order to ensure that the water resource is protected.

The **Reserve** is defined in the NWA as “the quantity and quality of water required -

(a) to satisfy **basic human needs** by securing a basic water supply, as prescribed under the Water Services Act, 1997 (Act No. 108 of 1997), for people who are now or who will, in the reasonably near future, be -

- (i) relying upon;
  - (ii) taking water from; or
  - (iii) being supplied from,
- the relevant water resource; and

(b) to protect aquatic ecosystems in order to secure ecologically sustainable development and use of the relevant water resource (referred to as the **ecological Reserve**);

## Invitation

As an identified important role player in this study, your organisation is invited to participate in the next PSC meeting. Your participation as a PSC member, is through contributing comments and information, attending project steering committee meetings, and by corresponding with the stakeholder department and the appointed PSP.

## The Study Area

The study area comprises two Tertiary Catchments:

- G30 Tertiary Catchment (Sandveld) to the south of the Olifants River Estuary; and
- F60 Tertiary Catchment immediately north of the Olifants River Estuary.

The Sandveld consists of the coastal plain along the west coast of South Africa bordered by the Olifants River catchment in the north and east, the Berg River catchment in the south and the Atlantic Ocean coastline in the west. The area comprises mainly of the three parallel seasonal river systems, namely Jakkals, Langvlei and Verlorenvlei. The catchments drain westwards through the Sandveld and consist of a combination of rivers, pans and wetland/vlei systems.

The Ramsar designated Verlorenvlei wetland system is the best known of these systems. The Ramsar treaty falls under the guidance of the United Nations and the International Union for the Conservation of Nature (IUCN) and member nations - of which South Africa is one and thus has agreed to the Ramsar treaty with its clearly defined responsibility of actively conserving the unique wetland and the biological diversity that it supports.



The Groot Goerap/Sout and Brak River Catchments in the F60 Catchment to the north of the Sandveld are in the even more arid Knersvlakte region that comprises low, undulating hills with isolated patches of white quartz stone and saline soils. Due to the poorly developed soils and the low agricultural potential of the area, only a small percentage of the area is cultivated and that is mostly in the south-eastern portion of the catchment.

## Study Approach

The Scope of Services for this study called for the identification of gaps in previous Reserve Determination Studies and to determine the Reserve at a high level of confidence that could be gazetted and provide legal protection specifications. Included in the Reserve determination are:

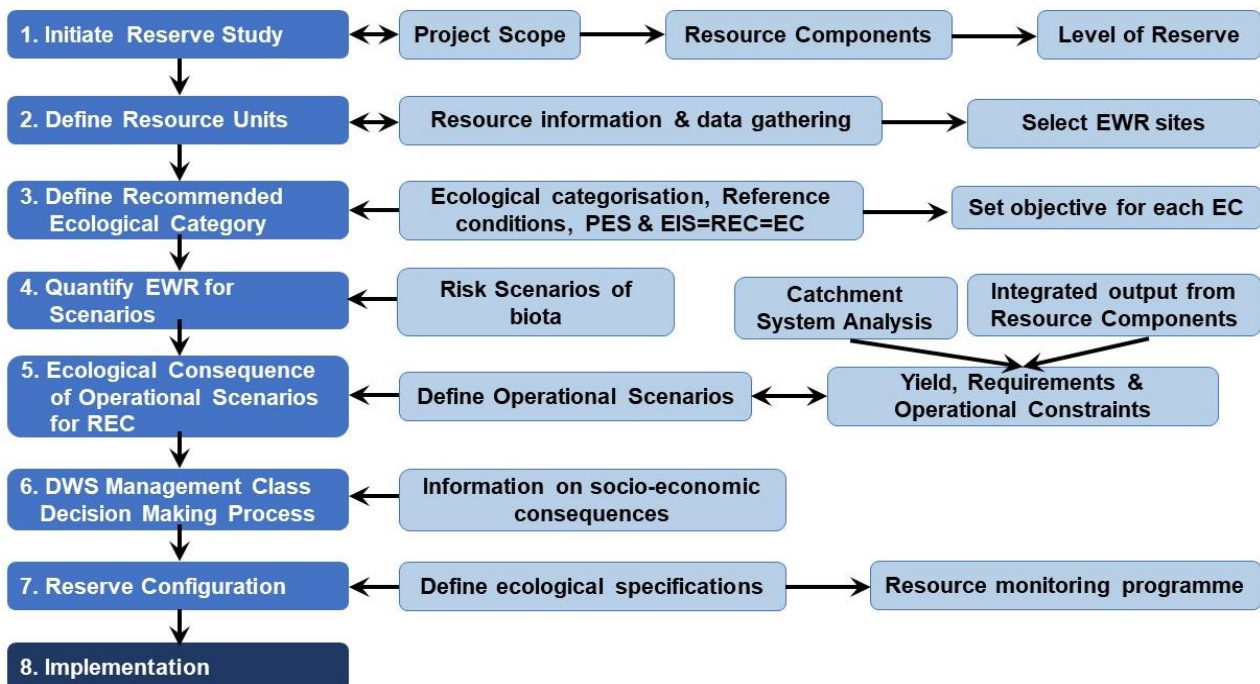
- Determination of the water quantity and quality for the protection of **rivers** at various **Ecological Water Requirement (EWR)** sites;
- Determination of the water quantity and quality for the protection of priority **wetland types**;
- Determination of the water quantity and quality of freshwater required for the **estuaries** to maintain the River Estuarine Interface Zone;
- Determination of the **groundwater** quantity and quality requirements for the protection of groundwater resources; and
- Determination of the quantity and quality of water required for the provision of **Basic Human Needs**.

### What are Ecological Water Requirements?

Ecological Water Requirements (EWR) are 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

A Reserve determination study endeavours to provide information at the highest level of confidence possible within the defined time, data availability and financial constraints of the project. These constraints dictate the spatial and temporal extent to which data can be collected and inform the understanding of aquatic ecosystem responses to flow volume and pattern changes. Within such a study, with a one- or two-year data collection period, a picture of the conditions in the ecosystems at the time of the study is formed that may provide greater confidence that the conditions at the time of the study are accurately recorded and represented. This is of utmost importance to set a management condition for the system.

The revised generic process for the determination of the Ecological Water Requirement is shown below within the context of the larger Resource Directed Measures process.



## Project Scheduling and Liaison

The project is scheduled to be undertaken over an 18- month period, ending 30 May 2023. Work undertaken to date on the project has included the delineation and defining of surface and groundwater resource units and study sites. Collection of data for the project during April 2022 (dry season) and September 2022 (wet season) and updating of the hydrology for the study area. Quantification of the EWR for surface and groundwater, and consideration of water use scenarios has also been completed. The compilation of the final EWR Reports that will include an implementation plan for the recommended EWR and the Reserve Template documents is underway.

Stakeholders representing specific sectors of society (e.g. agriculture, mines, conservation, civil society) have been identified and asked to serve on the PSC for the duration of the project. The PSC members are key stakeholder representatives that oversee the project and provide strategic advice and guidance. The PSC meet at key intervals during the study period to guide and provide input into the project deliverables. Individuals interested in being a representative of the PSC should contact DWS or the Project Team as soon as possible.

## Project Progress

PSC meetings for the project have been held on 21 January 2022, 21 July 2022 and 23 November 2022. Progress on the project since the second PSC meeting entailed compilation of the Ground and Surface water EWR Reports and the Scenario Report, which are in the process of being circulated for comment. A list of the reports compiled within the project includes:

- Inception Report
- Gap Analysis Report
- Groundwater Delineation Report
- Surface Water Delineation Report
- EcoClassification Report
- Ecological Water Requirements Report for Rivers, Wetlands and Estuaries
- Groundwater Reserve Report
- Scenario Report

Specialist reports in support of the above reports are being compiled for:

- Estuarine EWR reports for the Verlorenvlei, Wadrift and Jakkals Estuaries
- Hydrology and Hydraulics
- Water Quality
- Riparian Vegetation; Freshwater Fish and Macroinvertebrates
- Wetlands

Available documentation relating to the project and other similar studies can be found at the following link:

<http://www.dwa.gov.za/rdm/currentstudies/default.aspx>

**For further information, please contact:**

Mr. Yakeen Atwaru	Director: Reserve Determination	012 336 7816	atwaruy@dws.gov.za
Ms. Barbara Weston	Scientific Manager: Surface Water Reserve Determination	012 336 8221	westonb@dws.gov.za
Ms. Gladys Makhado	Production Scientist	012 336 6744	makhadog@dws.gov.za
Mr. Dana Grobler	Blue Science (Pty) Ltd	021 851 0555	dana@bluescience.co.za