water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

2030 NDP

The Determination of Resource Quality Objectives (RQOs) in the Mokolo, Matlabas, Crocodile (West) & Marico Catchments

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Date: 16-17 May 2017

Presentation Content

- Legal Mandate
- Study Area
- The Water Resource Classification System (WRCS)
- Study Focus: Determination of Resource Quality Objectives (RQOs)
- Process for the determination of RQOs & Progress to date
- Stakeholder Engagement Plan

Legal Mandate

- Chapter 3 of the National Water Act, (No. 36 of 1998) deals with the protection of water resources

- The measures for protection of water resources are:

  - Classification (S13)
  - Reserve (S16)
  - Resource Quality Objectives (S13)

- S12 requires the Minister to establish the Water Resource Classification System, (WRCS)

- WRCS was published as Regulation 810 in Government Gazette No. 33541 dated 17 September 2010

- The WRCS defines:
  - water resource classes and
  - the procedure to determine Class, RQOs and Reserve

- According to the NWA, once the WRCS has been gazetted all significant water resources must be classified

Study Area: Mokolo, Matlabas, Crocodile (West), Marico And Molopo Catchments

Southern Portion of the Limpopo Water Management Area

Major Drainage
Major dams
Quaternary catchments
Water Management Area
Urban Areas
Crocodile West Catchment
Marico Catchment
Matlabas Catchment
Mokolo Catchment
Upper Molopo Catchment
Ngotwane Catchment

0 125 250 500 750
Kilometres

Botswana
Limpopo
Gauteng
North West

Limpopo WMA
Olifants WMA
Vaal WMA

MOKOLO
MOLATEDI
NGOTWANE
UITKYK22JP
KROMELLENBOOG
LITTLE MARICO POORT
NARICO BOSVELD
LINDLEYS POORT
BIERSPRUIT
WARMBAD
KLIPVOOR
VAALKOP
ROODEKOPJES
BOSPOORT
KOSTER
OLIFANTSNEK
BUFFELSPOORT
HARTBEESPOORT
BON ACCORD
ROODEPLAAT
RIETVLEI
DISANENG
MODIMOLA

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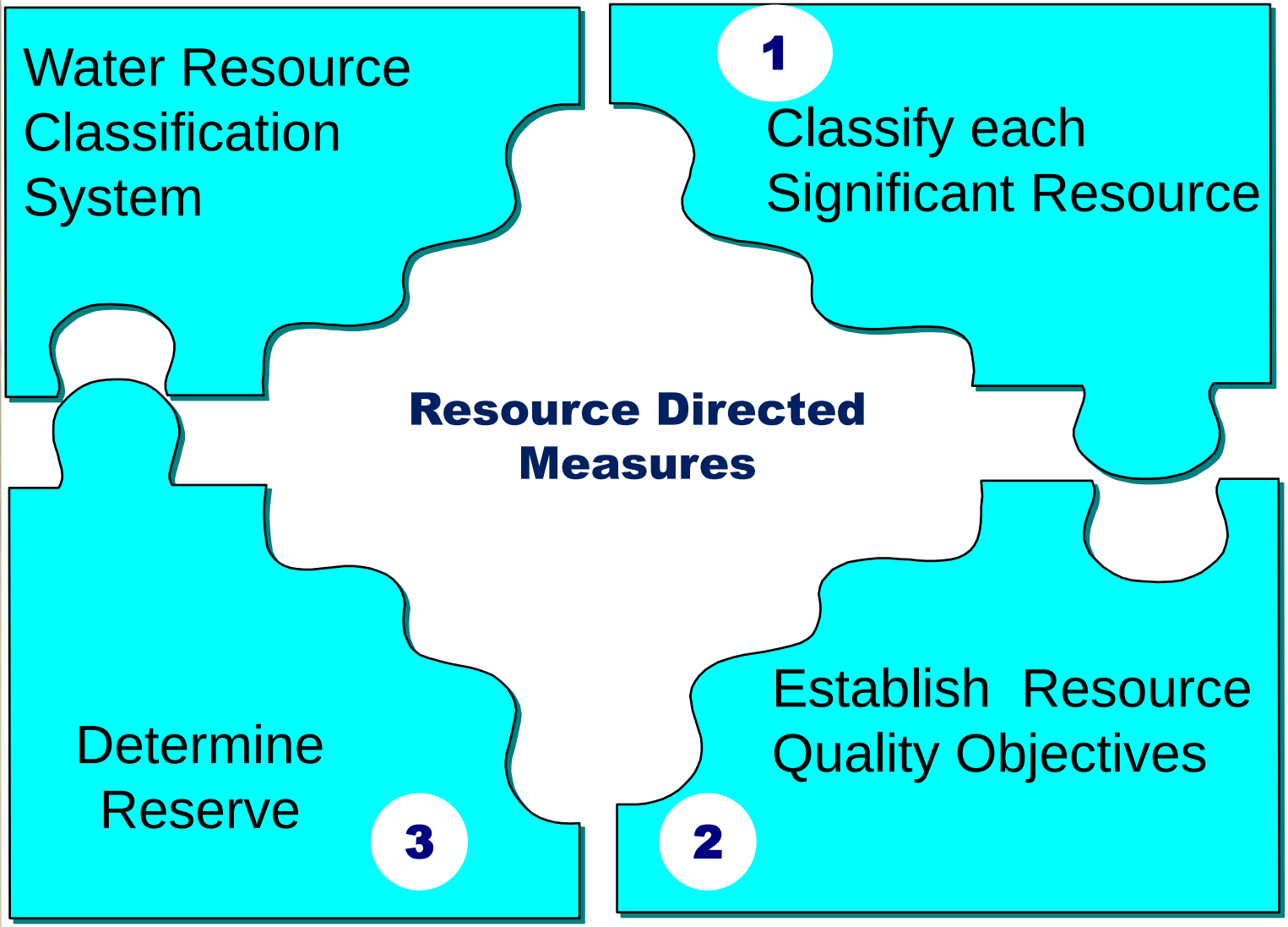
Contextualizing Resource Directed Measures



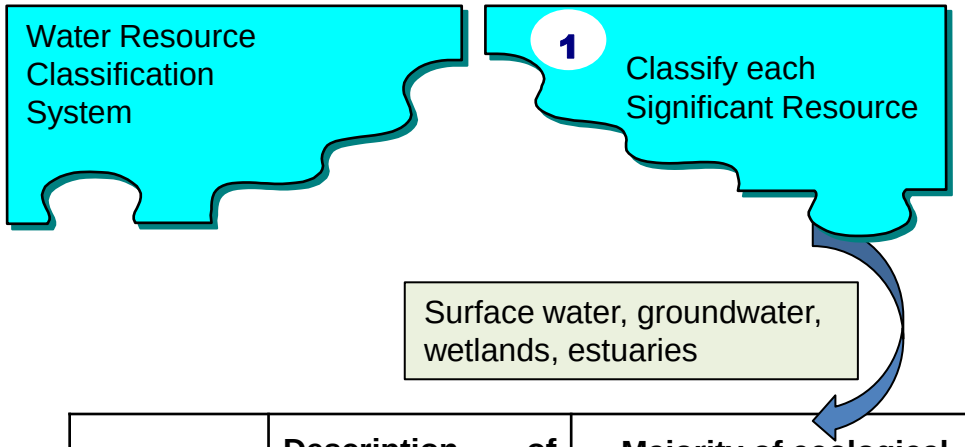
Classification System and Determination of Water Resource Classes

Each class (desired state) represents:

- a different **level of protection** required for the water resource, and
- **the extent to which the water resource can be used.**

Classification is used in two ways:

- To describe the **present status** of the water resource
- To describe the state towards which the water resource needs **to be managed** sustainably (**future state**).



	Description of use	Majority of ecological categories
Class I	**Minimally used**	**A-B**
Class II	**Moderately used**	**C**
Class III	**Heavily used**	**D**

Ecological Category (EC) - means the assigned ecological condition to a water resource . It is measured by determining how much the ecosystem has changed from natural (pre-development condition). The scale is A (near natural) to F (critically modified)

Classification steps

Step 1: Delineate the units of analysis and describe the status quo of the water resource or water resources;

Step 2: Link the socio-economic and ecological value and condition of the water resource or water resources;

Step 3: Quantify the ecological water requirements and changes in non-water quality ecosystem goods, services and attributes;

Step 4: Determine an ecologically sustainable base configuration scenario;

Step 5: Evaluate scenarios within the integrated water resource management process;

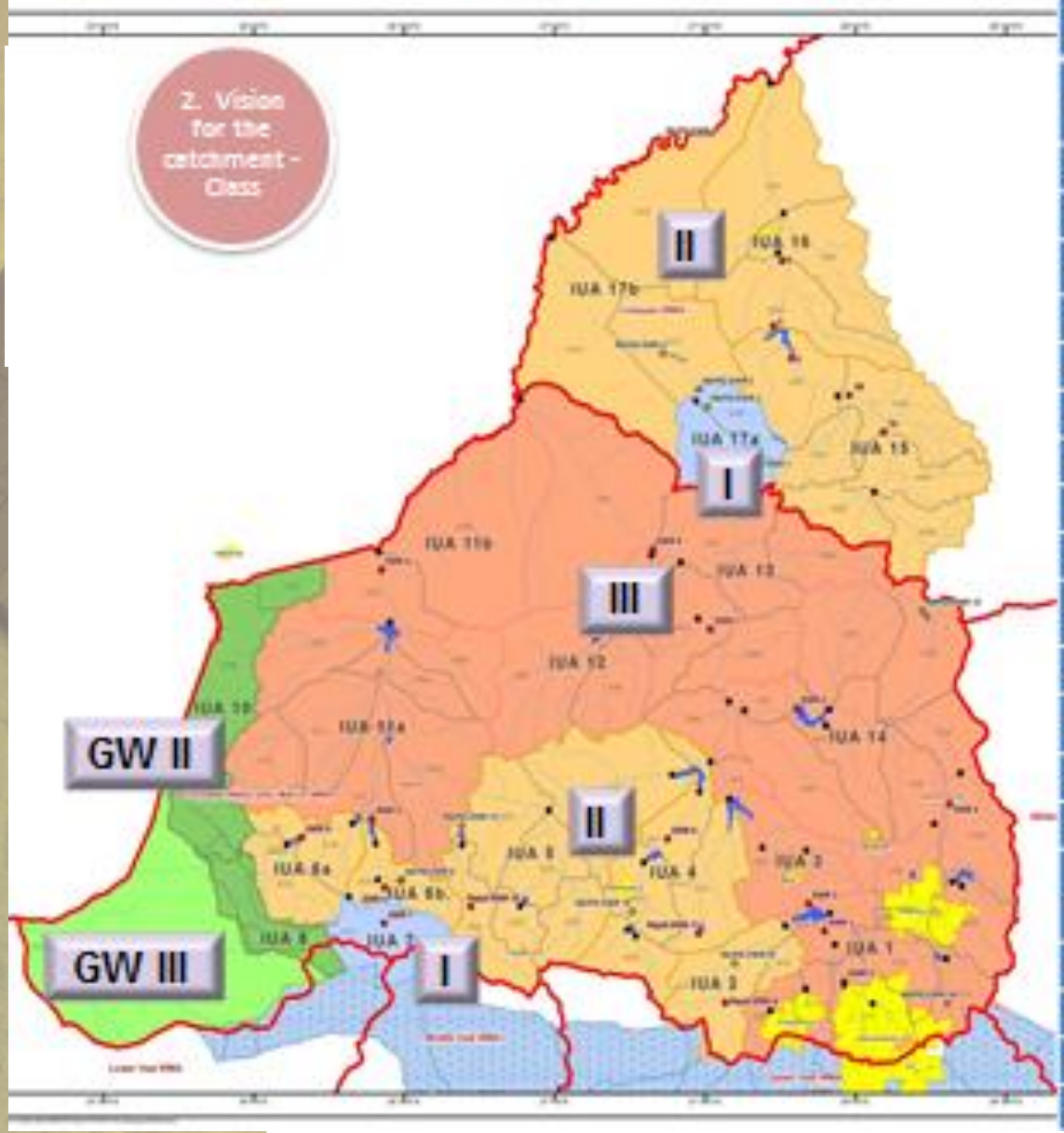
Step 6: Evaluate the scenarios with stakeholders; and

Step 7: Gazette and implement the class configuration

Outcome of classification study

- Study was finalised in 2013
- 17 IUA's delineated
- Classes determined in all 17 IUA's

Proposed Water Resource Classes



IUA No.	IUA and (Class)
1	Upper Crocodile/Hennops/ Hartebeespoort (III)
2	Megalies (II)
3	Crocodile/Roodekopjes (III)
4	Hex/Weterkloofspruit/ Veelkop (II)
5	Elands/Veelkop (II)
6a	Klein Marico (II)
6b	Groot Marico (II)
7	Kaaloog-se-Loop (I)
8	Malmaniesloop (GW II)
9	Molopo (GW III)
10	Dinokana Eye/Ngotwane Dam (GW II)
11a	Groot Marico/Molatedi Dam (III)
11b	Groot Marico/seasonal tributaries (III)
12	Bierspruit (III)
13	Lower Crocodile (III)
14	Tolwane/Kulwane/Moretele/Klipvoor (III)
15	Upper Mokolo (II)
16	Lower Mokolo (II)
17a	Mothlebetsi/Mambe (I)
17b	Matlabas (II)

Determining Resource Quality Objectives

These objectives provide statements about:

- what the **quantity** of the water should be (water level, pattern, timing)
- what the water **quality** should be (physical, chemical and biological
- what the **condition** of the **instream and riparian** (river bank) habitat should be
- what the **condition** of the **aquatic** (water) animal and plant life should be.

STUDY FOCUS: DETERMINATION OF RESOURCE QUALITY OBJECTIVES (RQOs)

- **RQO Study was initiated in March 2016**
- **Concludes in September 2017**
- **RQOs gives effect to classes**
- **75 out of 82 resource units were prioritised for the setting of RQOs**
- **Output: Resource Quality Objectives**: expressed as numerical limits or narratives for the protection of water resources
- **Water Resource Classes (2013) and RQOs will be gazetted together once approved by the Director- General.**

Process of Determining Resource Quality Objectives & Progress to date

RQOs 7-Step Procedure

: COMPLETED

: IN PROGRESS

: NEXT STEPS

What are Resource Quality Objectives?

Purpose → **"establish clear goals relating to the quality of the relevant water resources":** provide limits or boundaries for the sustainable use of water resources

- RQOs are numeric or descriptive statements of conditions which should be met in the receiving water resource;
- RQOs are intended to give effect to the Class determined
- Determined for surface water and groundwater resources
- RQOs are set for:
  - Water quantity,
  - Water quality,
  - Habitat,
  - Biota.
- RQOs are the objectives or goals which can be measured or monitored.

RQOs Cannot:

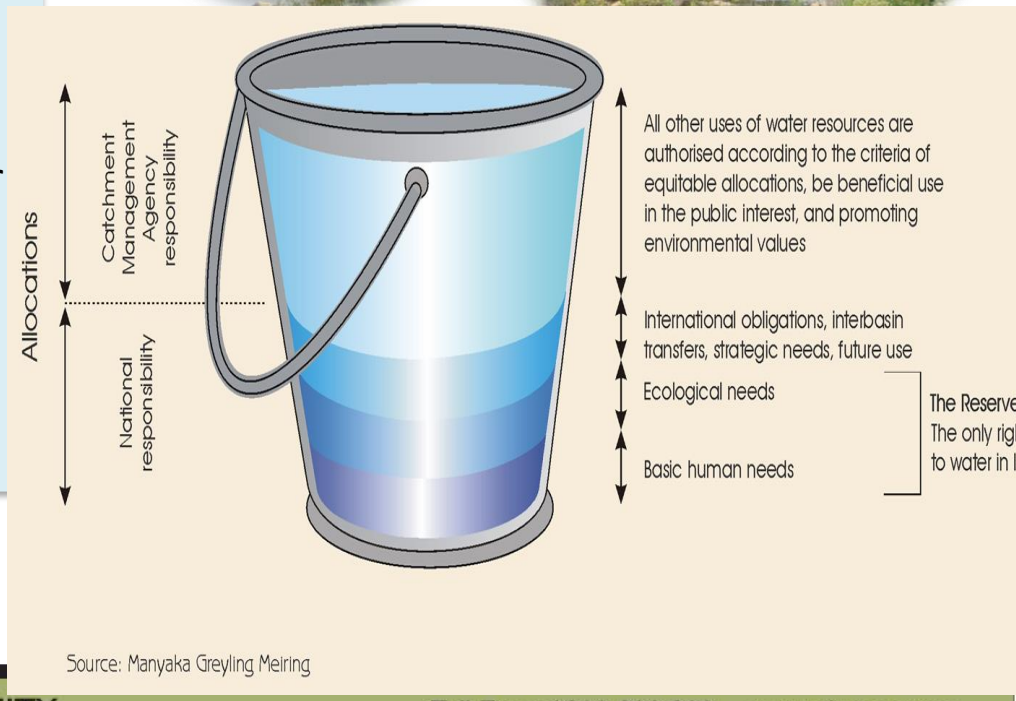
- Be applied to an individual license
- Replace the need for other monitoring programmes
- Include every available indicator of resource quality

Determining the Reserve

The Reserve is part of the water resource within each water management area that is under the direct control of the Minister. It is water that is 'set aside' to:

- provide for basic human needs, and
- protect water ecosystems (sustain healthy ecosystems).

It has priority over all other water use. Water required for the Reserve must be met before water resources can be allocated to other water users



Reserve

- Reserve is water set aside for basic human needs and aquatic life
- Reserve is preliminary when determined before classification
- Once classes and RQOs are gazetted, then the determined Reserve will be gazetted as well

Implications of Classes, RQOs & Reserve

- Once the Class is set, Reserve & RQOs in place, it is binding on all authorities or institutions when exercising any power, or performing any duty under the NWA.

- The implementation of Gazetted Class, Reserve & RQOs may necessitate the Department to:
  - Revise General Authorisations,
  - Update Discharge Standards,
  - Initiate Compulsory licensing,
  - Update Monitoring Programmes

Stakeholder Engagement

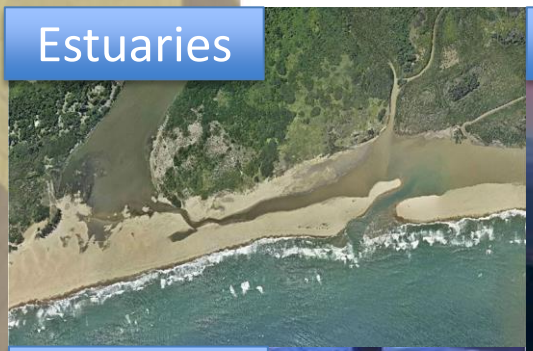
- 1st Specialist workshop (22-24 August 2016)
- 1st round PSC meetings (27 & 28 September 2016)
- Meeting with Marico River Conservation Association (10 November 2017) – on request
- Meeting with the Steenkoppies Aquifer Water User Association (12 December 2017) – on request
- 2nd Specialist workshop (01-02 February 2017)
- 2nd round PSC meetings (28 February 2017 & 01 March 2017)
- Forum meetings
- Final Public meeting (May 2017)
- Gazette proposed classes and RQOs for public comments (60 days)

All study reports and Issues and Responses Register are available on DWS website

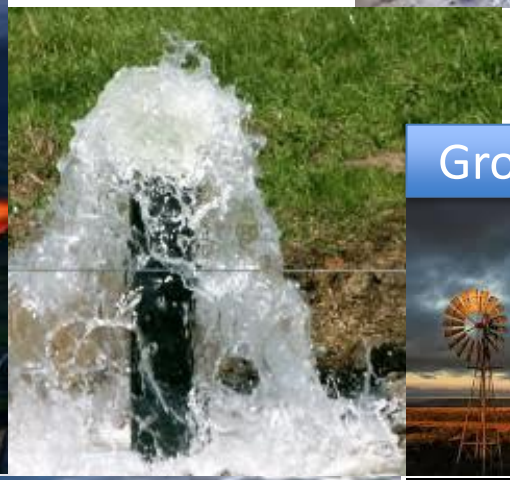
http://www.dwa.gov.za/rdm/WRCS/default.aspx

THANK YOU!

Estuaries



Rivers



Groundwater

Wetlands

Dams