water affairs

Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

RESOURCE QUALITY OBJECTIVES:

INTRODUCTION, PRIORITY RESOURCE UNITS & INDICATOR / DRIVING VARIABLE SELECTION

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RESOURCE QUALITY OBJECTIVES

1: Delineate units of analysis and describe the status quo

2: Initiation of stakeholder process and catchment visioning

3: Quantify EWRs and changes in Ecosystem Services

4: Identification and evaluation of scenarios within IWRM

5: Draft Management Classes

6: Resource Quality Objectives (EcoSpecs & water quality (user))

7: Gazette class configuration

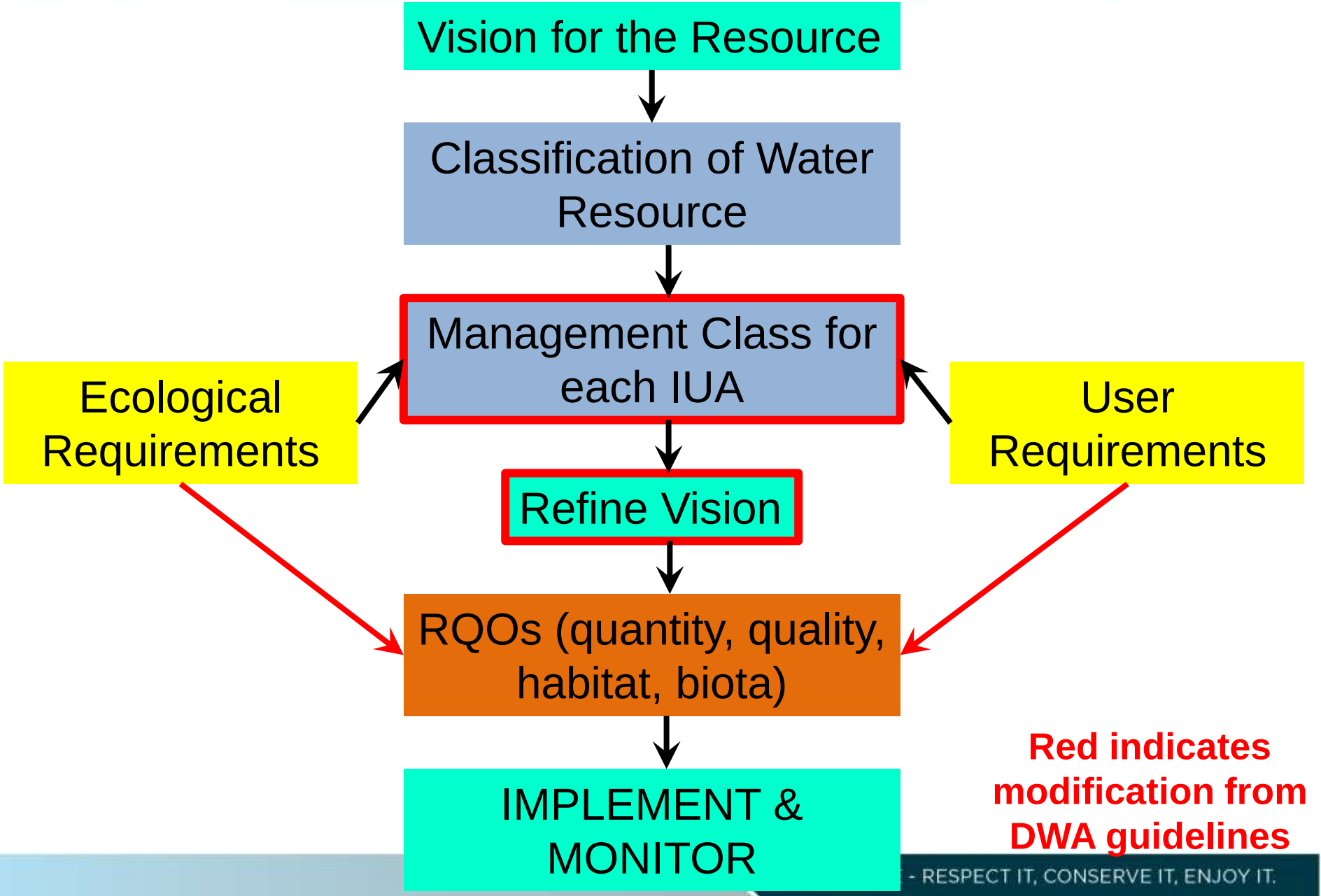
RQOs: Where does it fit in?

WHAT ARE RQOs?

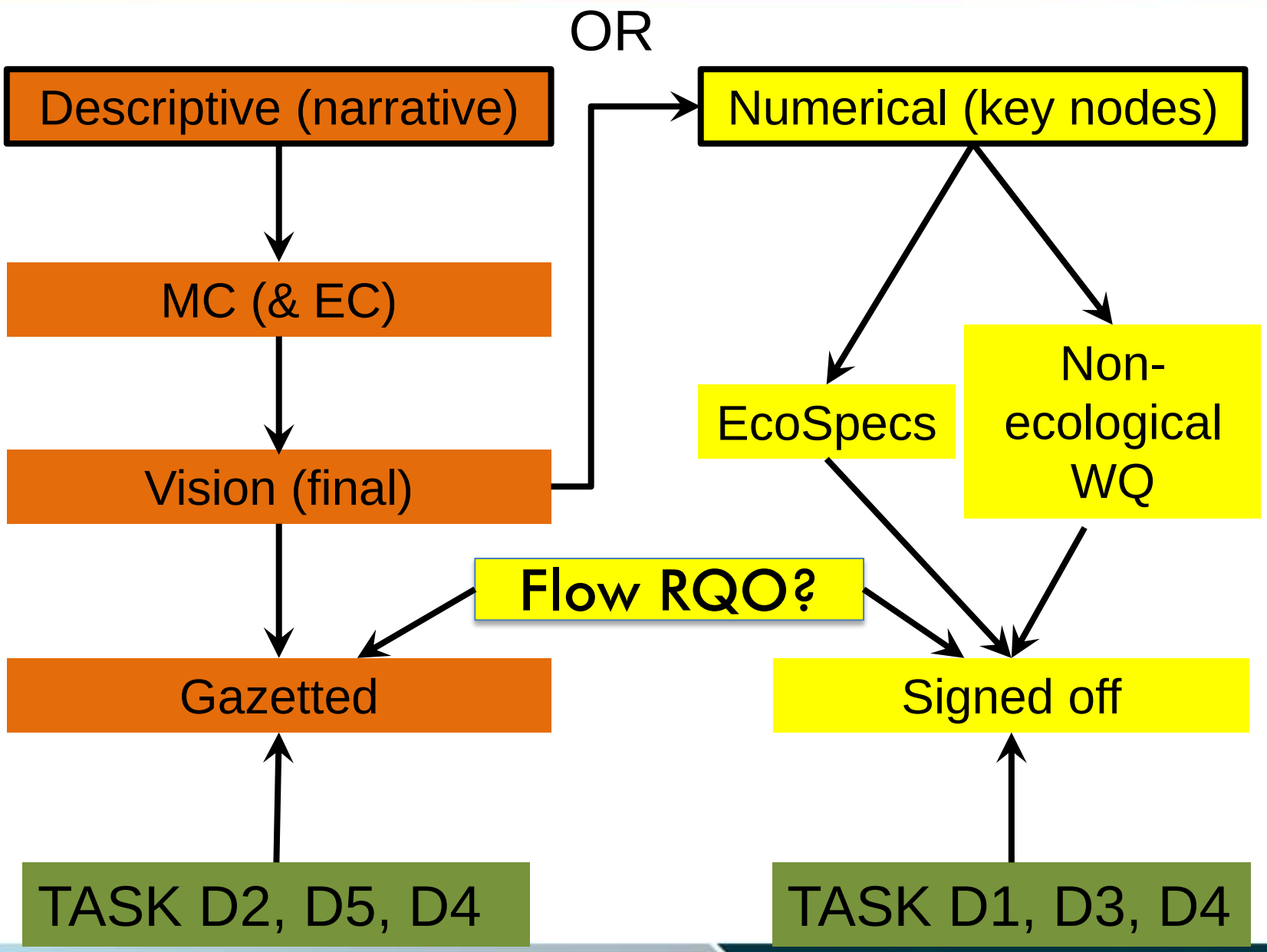
RQOs capture the **Management Class** of the Classification System and the **ecological needs determined in the Reserve** into **measurable management goals** that give direction to resource managers as to how the resource needs to be managed.

RQOs for a water resource are a numerical or descriptive statement of the conditions which should be met in the receiving water resource, in terms of resource quality, in order to ensure that the water resource is protected.”

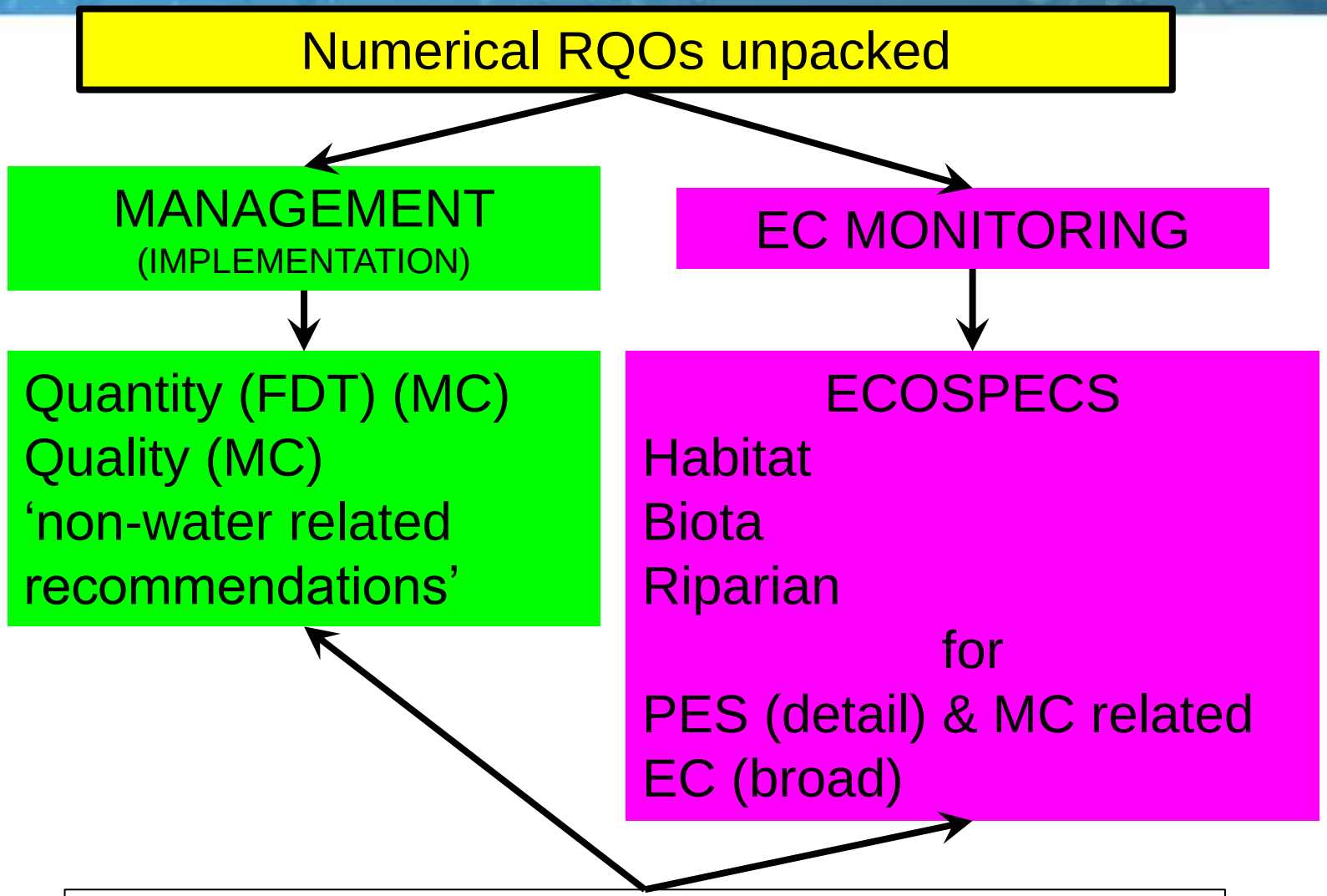
Resource Quality Objectives provide **numerical and/or descriptive statements** about the **biological, chemical and physical attributes that characterise a resource for the level of protection defined by its Class**. The NWRS therefore stipulates that "*Resource Quality Objectives might describe, among other things, the quantity, pattern and timing of instream flow; water quality; the character and condition of riparian habitat, and the characteristics and condition of the aquatic biota*".


Vision for the Resource
Classification of Water Resource
Management Class for each IUA
Ecological Requirements
User Requirements
Refine Vision
RQOs (quantity, quality, habitat, biota)
IMPLEMENT & MONITOR
Red indicates modification from DWA guidelines

WHAT ARE NARRATIVE & NUMERICAL RQOs?



HOW DOES RQOs LINK TO MONITORING?



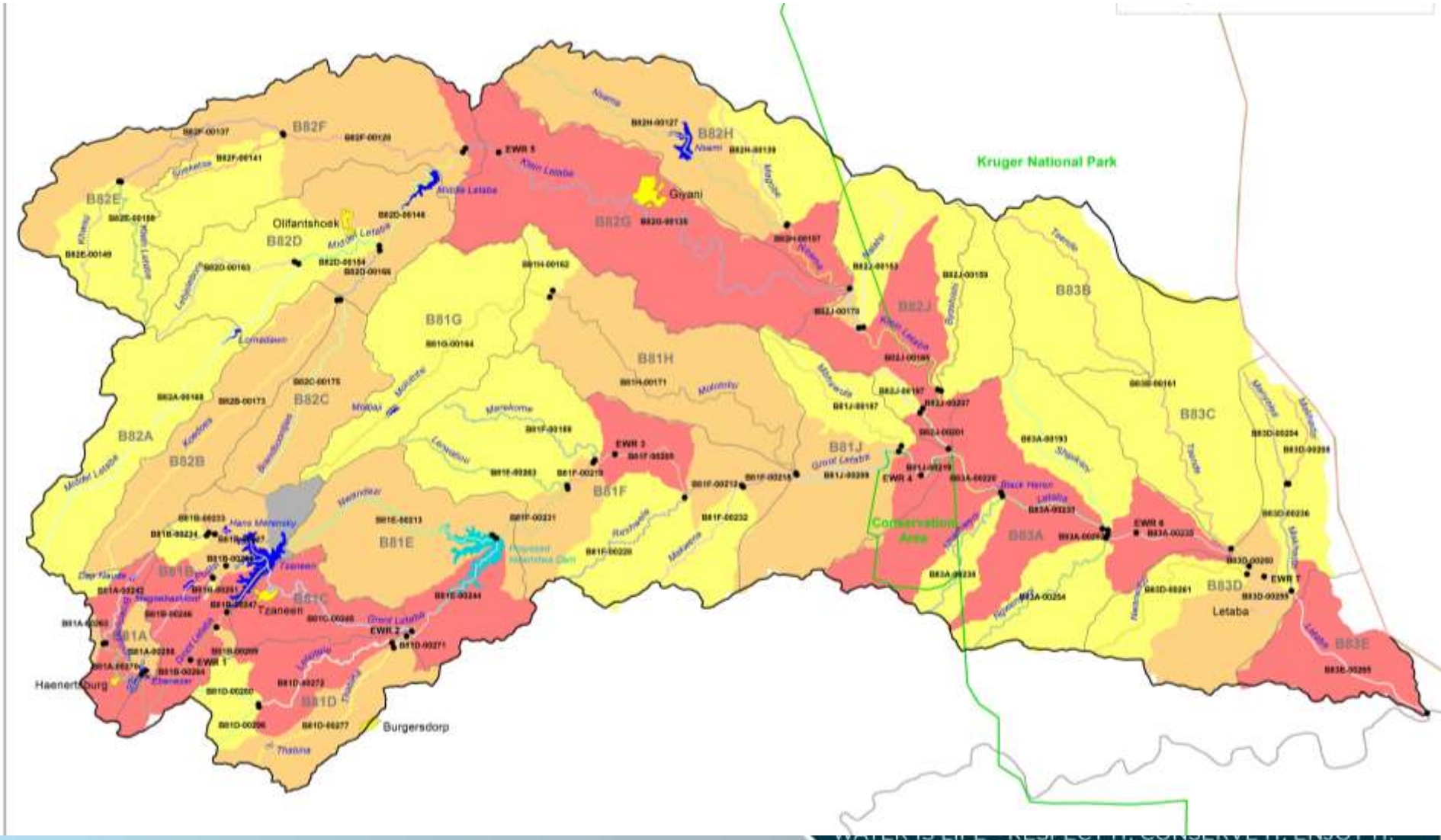
1. PRIORITISE AND SELECT RUs FOR RQO

FACTORS TO BE CONSIDERED:

Assess the importance of each RU to users	Task 1: Hotspot ✓
Determine the level of threat posed to water resource quality for users and the environment	Task 1: Hotspot ✓
Assess the importance of each RU to ecological components	Task 1: Hotspot ✓
Identify RU for which management action should be prioritised	Task 1: Hotspot ✓
Assess practical considerations associated with RQO determination for each RU	Task 1, 3, 4, 5 ✓
Evaluate the relative ranking and weighting of each criterion	Task 1: Hotspot ✓

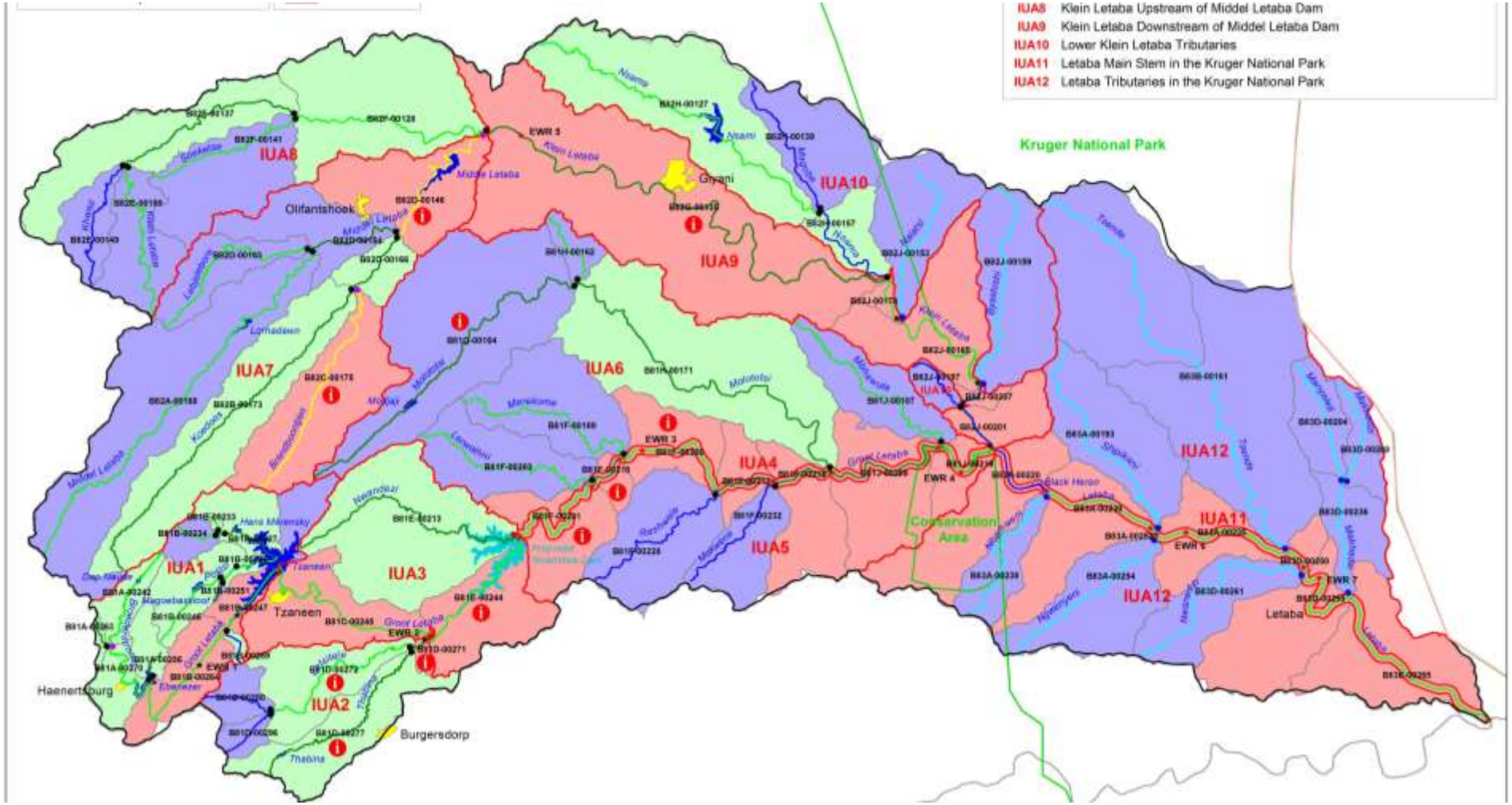
HOTSPOTS – INFORMING PRIORITY RU

Hotspot | Second level hotspot | Third level hotspot



PRIORITY RU: DERIVED FROM HOTSPOTS

High priority (3) | Moderate priority (2) | Low priority (1)



Prioritise sub-components for RQO determination, select indicators for monitoring & propose the direction of change

Identify and assess the impact of current and anticipated future use on water resource components	Task 4: Sc evaluation ✓
Identify requirements of important user groups	Task 4: Sc evaluation ✓
Selection of sub-components for RQO determination	Task 1, 3 & 6 ½✓
Establish the desired direction of change for selected sub-components	Task 1: REC & ✓ Task 4&5 - MC

PRIORITY INDICATOR COMPONENTS

IUA	Node name	Causes/sources comment	Key PES Driver	REC	Component indicator
IUA 1	B81B-00246	MODERATE: Inundation, Large dams, Small dams (farm), Vegetation removal, **LARGE: Exotic vegetation, SERIOUS: Forestry,**	Non-Flow & Flow combo	**C**	1. Rip veg 2. Instream biota
IUA 10	B82H-00127	**MODERATE: Agricultural lands, Crossings low water, Exotic vegetation, Grazing / trampling, Vegetation removal, LARGE: Runoff/effluent: Urban areas, Urbanization,**	Combo (WQ and Non-flow)	**C**	1. Rip veg
IUA 8	B82F-00137	**MODERATE: Crossings low water, Exotic vegetation, Natural areas/nature reserves, Roads, Sedimentation, LARGE: Agricultural lands, Algal growth, Erosion, Runoff/effluent: Urban areas, Grazing / trampling, Urbanization, Vegetation removal,**	Non flow & related water quality	**D**	1. Rip veg 1. Water quality 2. Instream biota

Direction of change – consequence of MC

PRIORITY INDICATOR SUBCOMPONENTS

IUA	Node name	Component indicator
IUA 1	B81B-00246	1. Rip veg 2. Instream biota
IUA 10	B82H-00127	1. Rip veg
IUA 8	B82F-00137	1. Rip veg 1. Water quality 2. Instream biota

Examples of subcomponents indicator

Riparian EC
Aerial cover
% aliens

Fish EC
Sp
Sp richness
FROC

Nutrient levels
Conductivity
Toxics

NEXT TWO PRESENTATIONS WILL FOCUS ON

1. **HABITAT, FLOW AND BIOTA ECOSPECS**
2. **USER SPECS (NON-ECOLOGICAL WATER QUALITY)**

QUESTIONS FOR CLARIFICATION