

Determination of Ecological Water Requirements for Surface Water (Rivers, Estuaries and Wetlands) and Groundwater in the Lower Orange WMA: WP10974

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ORANGE RIVER ECOLOGICAL CONSEQUENCES

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WATER IS LIFE, SANITATION IS DIGNITY

ECOLOGICAL CLASSIFICATION

What is ecological classification?

- EcoClassification consists of three processes:
 - Present Ecological State (PES)
 - Ecological Importance
 - Recommended Ecological Category (REC)
- The PES describes river according to ecological status or health compared to natural conditions.

ECOLOGICAL CLASSIFICATION

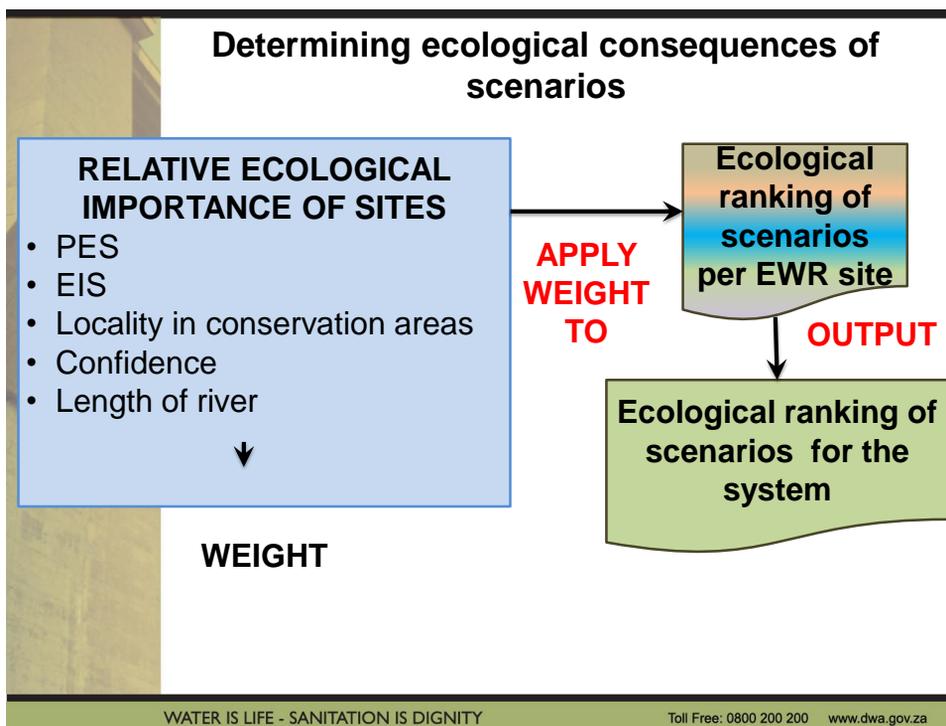
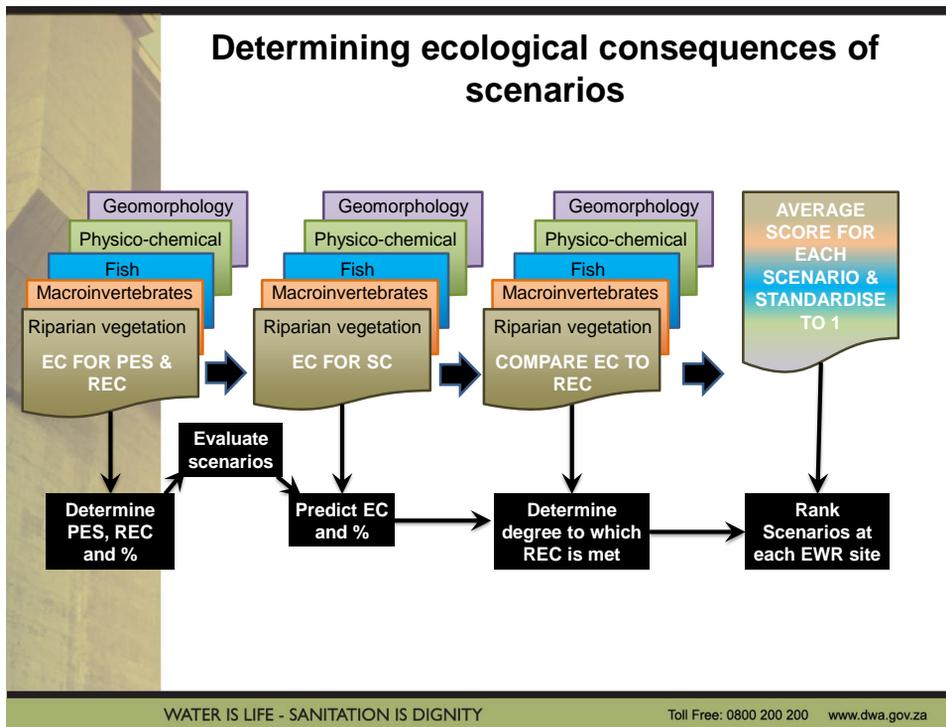
Ecological status described in terms of Ecological Categories:

- A – near natural,
- B – largely natural
- C – moderately modified
- D – largely modified
- E – seriously modified
- F - critically modified.

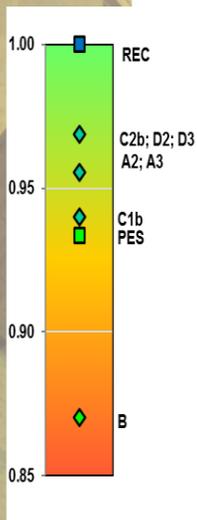


Determining ecological consequences of scenarios

- Need to answer the 'what if' questions
- Express in terms of change in Ecological Category AND degree in which the REC is met
- Detailed process to predict changes in all the biophysical components per site and per scenario.
- Then to integrate and demonstrate in systems context

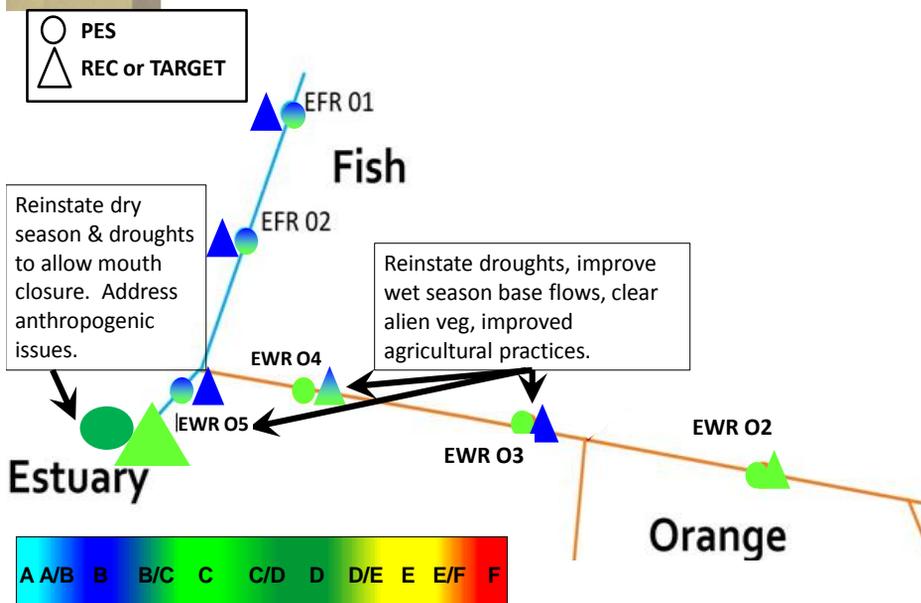


TRAFFIC DIAGRAMS

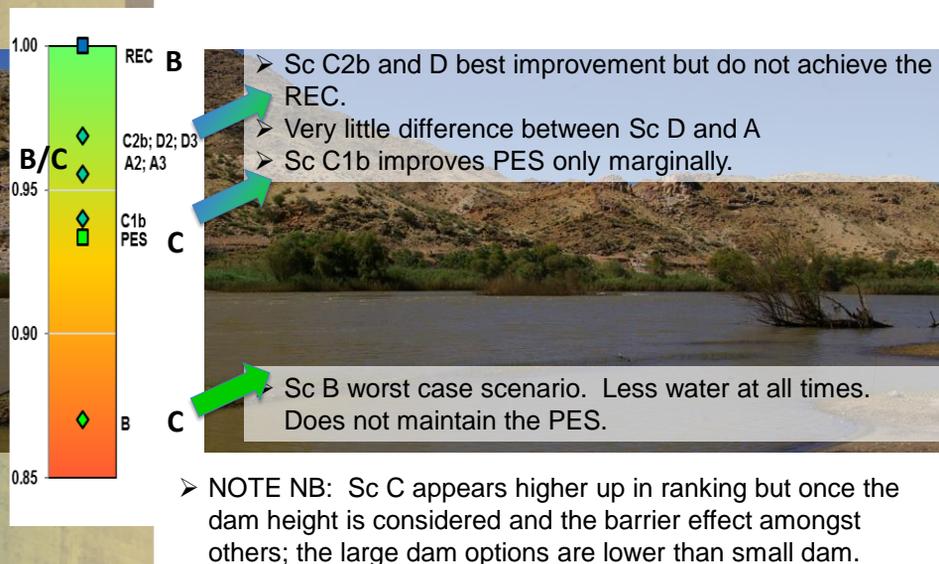


- A traffic diagram is a bar graph that is shaded according to the colours of a traffic light.
- This implies that the items at the top (in the green section) is better than the ones below.
- The scale of the bar graph could be anything, the importance is the ranking of this.
- The purpose is to rank scenarios for all the different components using different scales of measurements, but visually being able to compare the rankings using traffic diagrams.

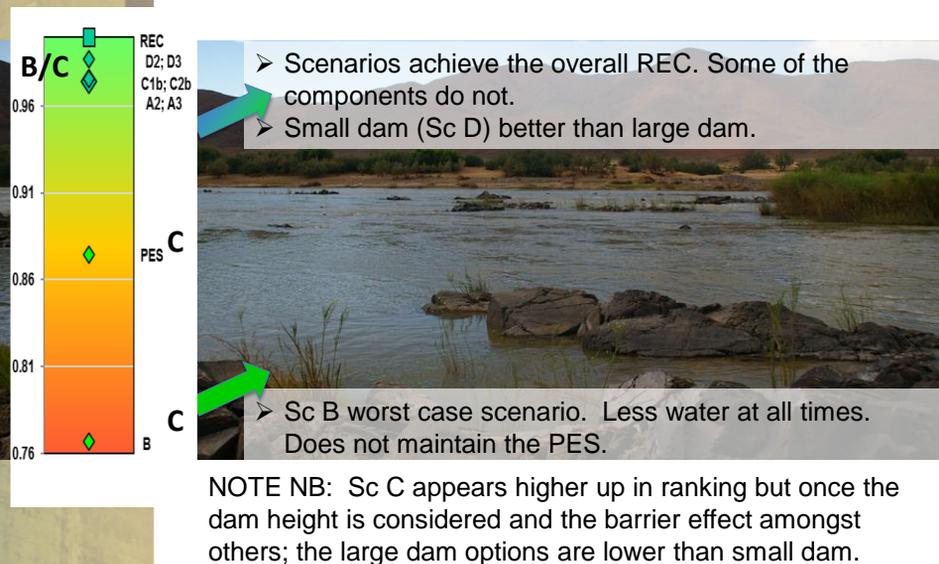
Actions to achieve target



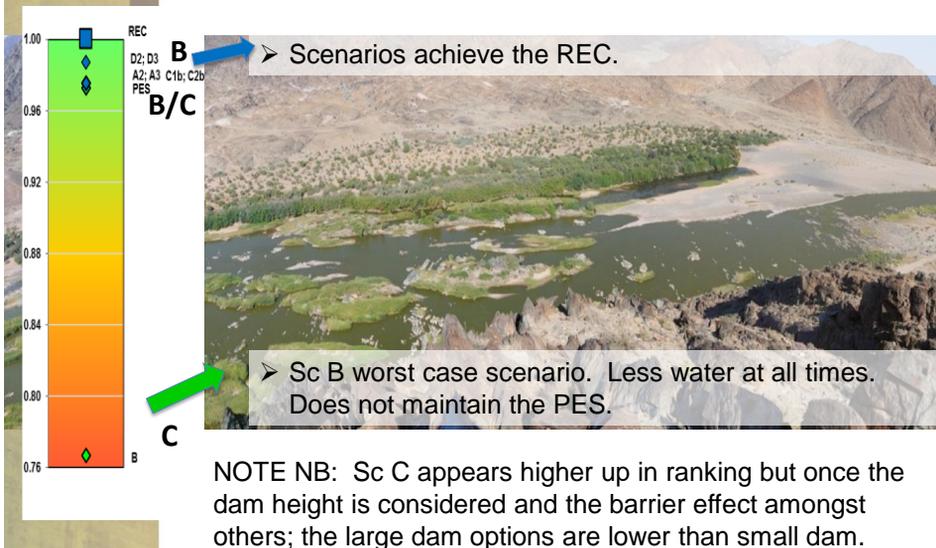
EWR O3: SCENARIO CONSEQUENCES



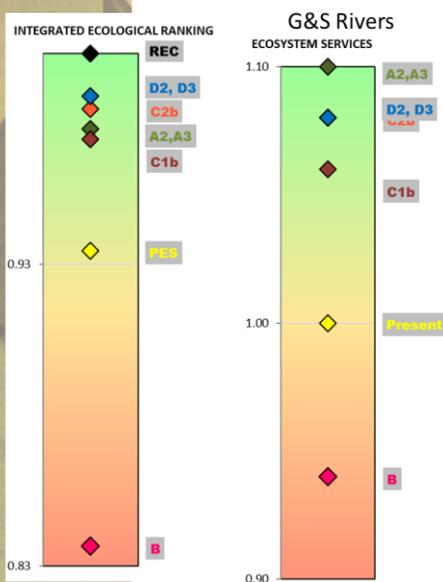
EWR O4: SCENARIO CONSEQUENCES



EWR O5: SCENARIO CONSEQUENCES



PRE-DAM ENVIRONMENTAL CONSEQUENCES:

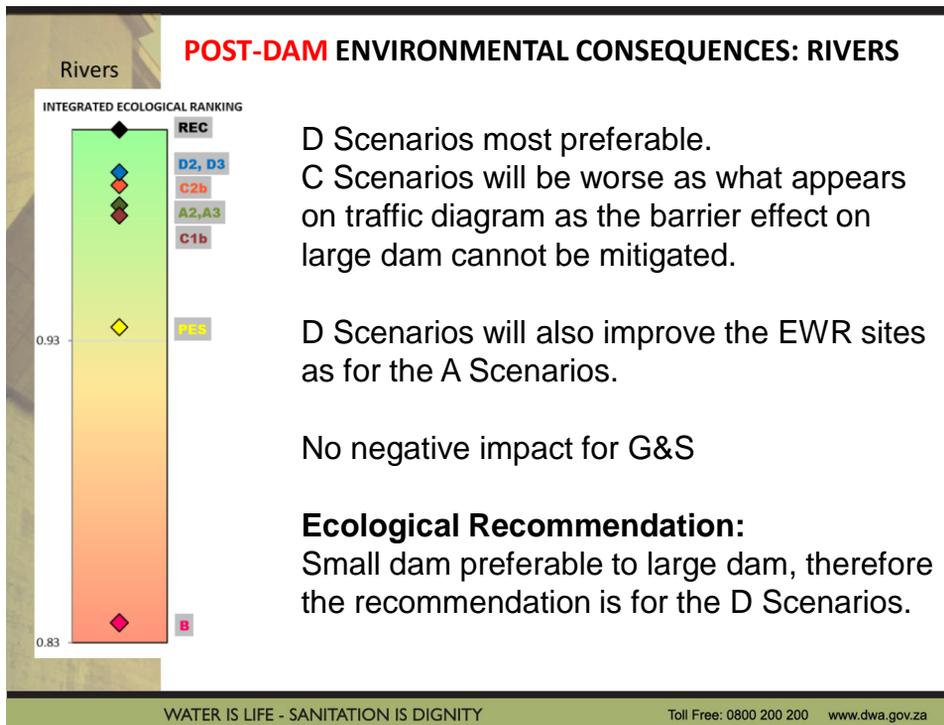


- Pre Dam: A2 and A3 show improvement and
- achieve REC at EWR O5,
 - partially at EWR O4 and
 - improves PES at EWR O3.

No negative impact for G&S

Ecological Recommendation: Immediately implement Sc A.

NB: Also remember non-flow actions required!



QUESTIONS FOR CLARIFICATION

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