CHIEF DIRECTORATE NATURAL RESOURCE MANAGEMENT PROGRAMMES:

Wetland Programmes

Biodiversity assessments in determining wetland conservation priorities: a catchment approach

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Environmental Programmes
International Perspective: Wetland occurrence

• IMCG: 50% of wetlands are peatlands (4mil km$^2$), thus 5 to 6% of earth are wetland.

• Mitsch and Gosselink, in their standard textbook *Wetlands*, 3d ed. (2000), suggest 4 to 6% of the Earth's land surface.

• A global review of wetland resources prepared for Ramsar COP7 in 1999, indicated a potential total of between 999 and 4,462 million hectares, thus 1 to 4.5% of the Earth's land surface.

• the Millennium Ecosystem Assessment (2005) estimates 1%

• **Estimate for South Africa: 4 – 8 %; latest <3**
International Perspective: Wetland loss

- the Millennium Ecosystem Assessment (2005) reported that more than 50% of the area of certain wetland types had been lost during the 20th century.
- Junk et al. (2013), the amount of loss of wetlands around the world varies between 30 and 90%, depending on the region.
- Review of Davidson (2014) found that the extent of inland wetlands declined 69-75% during the 20th century.
- SA: 20 - 58% + lost: 48% of remainder threatened
Purpose of Working for Wetlands

• Is to champion the protection, rehabilitation and sustainable use of South Africa’s wetlands through co-operative governance and partnerships
• Main drive in the past 16 years was wetland rehabilitation
In future:

• Extension
• Compliance
• Communication/Advocacy work
• Capacity building
Working for Wetlands Planning requirements:

**Wetlands depend on catchments**

- Prioritise catchments
- Prioritise wetlands for rehabilitation per catchment with provincial wetland forums
- Identify and quantify impacts per wetland
- Compile wetland assessment and rehabilitation plan
- In parallel: Socio-economic aspects
We migrated: from SANBI to DEA
Planning: In future – 2016!

- Working for Wetlands embarked in 2015 on a new planning process
- Need to balance sound ecological outcomes whilst maximizing socio-economic benefits
- Prioritization needs to start on a national scale taking the above in consideration.
Prioritizing catchments for wetland rehabilitation planning at a national level

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Introduction to the initiative

- **Aims & objectives of the process**
  - The specific objective is to develop a map that reflects the relative priority of catchments across the country for wetland rehabilitation.
  - The intention is that this will then act as a *point of reference* when refining strategic priorities and budget allocations of the programme at both a national and provincial level.
Approach to the assessment

• Scale of the assessment
  • National (rather than regional) prioritization exercise
    • Initial prioritization model based on a tertiary catchment scale (far too course for meaningful provincial planning)
  • Most data now available at least at a quaternary catchment scale with a range of data available at sub-quaternary catchment scale (e.g. NFEPA)

• Sub-quaternary catchments were selected for this assessment using national datasets.
Datasets were screened and grouped into **consistent themes** in line with the objectives of this prioritization exercise.

<table>
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<tr>
<th><strong>Biodiversity value:</strong> Importance of catchments for meeting wetland (and broader aquatic) conservation objectives.</th>
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<td>Functional value: Demand for key regulating and supporting services provided by wetlands.</td>
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<td><strong>Rehabilitation potential:</strong> Opportunity for wetland rehabilitation within catchments based on wetland characteristics.</td>
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<td><strong>Partnerships:</strong> Opportunity for Working for Wetlands to partner with other initiatives within different catchments.</td>
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Catchment prioritization

- **Biodiversity value**
  - Wetland Threat Status (0.5)
  - FEPA Catchments (0.25)
  - Wetland FEPAs (0.1)
  - FEPA Clusters (0.15)
  - Aquatic Conservation Plans (0.25)
Catchment prioritization

Functional value

Water quality enhancement (0.35)

Sediment retention (0.35)

Flood attenuation (0.15)

Stream-flow regulation (0.15)

Physico-chemical modification (0.2)
Eutrophication (Dams) (0.5)
Toxic contaminants (0.3)
Dam catchments (Max)
Rural water provision (Max)
Sediment yield (0.3)
Erosion hazard (0.4)
Gully erosion (0.2)
Land degradation (0.1)
Dam catchments (0.7)
Rural water provision (0.3)
Mean annual storm flows (1.0)
Settlement density (Max)
Urban flood risk (Max)
Agric flood risk (Max)
Mean annual runoff (0.75)
Frosting back (0.25)
Dam catchments (0.3)
Rural water provision (0.7)
Sediment retention / erosion control
Storm flows and Streamflow regulation
Partnerships

Conservation initiatives (0.7)
- Formal Protected Areas: 1.0
- Stewardship Sites: 1.0
- Ramsar sites: 0.8
- Informal protected areas: 0.2 - 0.6
- Protected area expansion plans: 0.3 - 0.4
- Sectoral stewardship: 0.4

Supporting initiatives (0.3)
- SIP 19 Priorities: 0.2 – 1.0
- Regional-level initiatives (0.3 – 1.0)
Catchment prioritization

- Outcomes-based prioritization framework

**Biodiversity maintenance:**
What opportunity exists to contribute towards biodiversity conservation objectives.

**Functional enhancement:**
What opportunity exists to contribute towards the enhancement of wetland functioning.

**Catchment priority:**
Catchments that provide the greatest opportunity from either a biodiversity maintenance or functional enhancement perspective.
Planning

- Challenge: How do we incorporate provincial datasets into the process?
Questions/Comments?