Biodiversity of Pans
Khakhea-Bray Transboundary Aquifer Region

Tatenda Dalu
Pan Wetlands
Wetland Biodiversity Matters

Wetland biodiversity matters

For the climate
30% of land-based carbon is stored in peatlands

For clean water
Swamps and marshes remove pollutants

For jobs
One billion people depend on wetlands for their livelihoods

For economies
Wetlands provide USD 47 trillion in essential services annually

Loss of wetlands = Loss of biodiversity

87% of the world’s wetlands have been lost globally in the last 300 years

Key drivers of wetland loss
• Pollution
• Drainage
• Land conversion

One million animal and plant species threatened with extinction

Wetland species threatened with extinction
• Reptiles
• Amphibians
• Water birds
• Mammals

End biodiversity loss, restore wetlands

Learn more: WorldWetlandsDay.org, #WetlandBiodiversityMatters
Why Care About Groundwater
Biodiversity Affiliated Institutions

Aquatic Systems Research Group

UNIVERSITY OF MpUMALANGA
Creating Opportunities

RHODES UNIVERSITY
Where leaders learn

University of Venda
Creating Future Leaders

National Research Foundation
South African Institute for Aquatic Biodiversity

UNIVERSITY of the WESTERN CAPE
Biodiversity Key Members

• Dr Tatenda Dalu
• Prof Ryan J Wasserman
• Dr Adam Wyness
• Dr Chad Keates

➢ Mr Farai Dondofema
➢ Prof Timothy Dube
Biodiversity Students

**PhD**
- Chipo P Mungenge

**MSc**
- Fannie M Masina
- Frank T Bute
Key Aims

• The documentation of important plant and animal species for the pans.
  ➢ This will help with the identification of keystone species for conservation prioritization.

• Identify hotspots where management interventions should be focused.
  ➢ These could be GDEs where groundwater mining is taking place hence affecting the integrity of the ecosystems.
# Working Plan

<table>
<thead>
<tr>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
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</thead>
<tbody>
<tr>
<td>Characterizing the species existing at selected GDEs.</td>
<td>• Ecological/Biodiversity surveys at identified GDEs</td>
<td>• Data on biodiversity at the selected GDEs available to the public through the SADC-GIP and what global repository? GBIF?</td>
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<tr>
<td>Determining the relationship between the species and the groundwater dynamics (Identification of hot spot GDEs in the TBA)</td>
<td>• Report on the ecological/groundwater interactions (cause and effect relationship)</td>
<td>• Research publications available through the SADC-Grey Literature Archive.</td>
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<tr>
<td>Identification of species and ecological communities of conservation concern relying on groundwater status</td>
<td>• GDEs/Species most dependent on groundwater Identified.</td>
<td>• Hotspot GDEs identified and prioritised for interventions.</td>
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<tr>
<td>Develop a spatial database of the species biodiversity at the GDEs</td>
<td>• Biodiversity survey completed and data captured into a database.</td>
<td>• Biodiversity data set readily available to the public (SADC-GIP data is open source).</td>
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## Key Deliverables

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Description</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Team Engagement</strong></td>
<td>Meeting: Project leaders and postgraduate students</td>
<td>End of Month 6</td>
</tr>
<tr>
<td><strong>Stakeholder Engagement 1</strong></td>
<td>Workshop: Project Presentation and Input</td>
<td>End of Month 6</td>
</tr>
<tr>
<td><strong>Deliverable 2</strong></td>
<td>Literature Review and Proposal: Biodiversity</td>
<td>End of Month 12</td>
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<tr>
<td><strong>Deliverable 5</strong></td>
<td>Preliminary Results: Biodiversity</td>
<td>End of Month 18</td>
</tr>
<tr>
<td><strong>Stakeholder Engagement 2</strong></td>
<td>Workshop: Results Presentation and Input</td>
<td>End of Month 28</td>
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<tr>
<td><strong>Deliverable 8</strong></td>
<td>Draft Final Report: Biodiversity</td>
<td>End of Month 30</td>
</tr>
<tr>
<td><strong>Deliverable 11</strong></td>
<td>Final Report: Biodiversity</td>
<td>End of Month 33</td>
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</tbody>
</table>
Thank You