

Focused wetland prioritisation in Amathole District Municipality

Planning for wetland rehabilitation in Amathole District Municipality through focused wetland prioritisation

Lack of capacity, support and funding, has meant that municipal officials within Amathole District Municipality (ADM) are curtailed in their ability to make effective decisions around wetland planning and rehabilitation in order to secure water for the district. This has resulted in wetlands in the upper catchment historically being degraded through over grazing and informal agriculture resulting in increased erosion and wetland degradation and dams downstream, such as the Xilinx Dam, being filled with sediment. This results in decreased water availability for communities downstream reliant on the dam for water security and increases the risk of vulnerable communities to the impacts of drought.

Through a Wetland Strategy and Action Planning process, facilitated by ICLEI Africa as part of the Local Action for Biodiversity: Wetlands South Africa project, ADM identified a clear need for mapping of wetlands

as well as the identification and prioritisation of key wetlands for rehabilitation in order to increase water security within the district. In October 2017, ADM was awarded funding through the LAB: Wetlands SA project to map and prioritise wetlands within ADM for rehabilitation.





“Wetlands are the most threatened of all of South Africa’s ecosystems with 48% of wetland ecosystems being critically endangered.”

- South African National Biodiversity Institute (SANBI), National Biodiversity Assessment, 2011.

SETTING THE SCENE

Amathole District Municipality (ADM) is considered to be a strategic water source area of South Africa. The reason for this is that due to the disproportionate amount of high rainfall and run-off received in the area compared with the rest of the region, ADM is responsible for ensuring that ‘natural infrastructure’ such as wetlands are maintained in order to sustain good quality water supplies for human consumption as well as agriculture.

Wetlands within ADM, particularly those located in the upper catchments where rainfall and run-off is highest, are highly susceptible to poor agricultural practices, overgrazing, over burning and erosion. These practices have, over time, resulted in these wetlands being severely degraded or even lost entirely. In order to continue to secure water for the local communities living within ADM and make the district more resilient to the impacts of drought, the municipality aims to focus more on wetland rehabilitation.

Lack of capacity, support and funding however, coupled with a lack of detailed spatial data and understanding of where to prioritise efforts, has meant that AMD municipal officials are curtailed in their ability to make effective decisions around wetland planning and rehabilitation. As a result they are not able to contribute meaningfully towards wetland conservation, despite their best intentions.

ADM has been part of the Local Action for Biodiversity: Wetlands South Africa (LAB: Wetlands SA) since 2015 and through the project has developed a district level Wetland Strategy and Action Plan (WSAP) which identifies the major gaps in wetland management and provides provision for addressing these issues through detailed action planning. Some of the critical gaps identified during this process include the need for detailed mapping of wetlands within the municipality and the identification and prioritisation of key wetlands for rehabilitation to increase water security within the district. This case study provides an overview of how this gap is being addressed.

WHY WETLANDS ARE IMPORTANT TO AMATHOLE

The wetlands within Amathole District Municipality are considered to be high-value ‘ecological infrastructure’, in that they provide vital habitat for flora and fauna, but also provide critical ecosystem services to the municipality. These include:

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- Flood attenuation and stream flow regulation
- Water filtration and purification
- Erosion control
- Water storage
- Food and medicinal plant provision
- Supply of raw materials
- Clean drinking water

The wetlands within the municipality also play a pivotal role in disaster risk management as well as reducing the impacts of climate change within the district.

What makes Amathole District Municipality unique?

Amathole District Municipality is located in the Eastern Cape Province of South Africa and covers an area of 23 577 km². The biodiversity within Amathole District Municipality is immense and represented in 5 different biomes; namely Savannah, Grasslands, Albany Thicket, Indian Ocean Coastal Belt and Forest. As a result a high percentage of South Africa's rare and threatened ecosystems and species can be found within the district. In addition to rivers, thickets, valleys and mountains, numerous wetlands, of high ecological value and exceptional beauty, are found throughout the municipality. These provide crucial habitat for not only a number of species specially adapted to the various biomes found within the district but also provide habitat for a variety of nationally critically endangered flora and fauna species.



THE STORY

Strategic thinking, partnership development and sourcing of funding

As part of the LAB: Wetlands SA project, a portion of funding was made available to a maximum of three municipalities participating in the project to develop and implement a wetland implementation project that addresses a critical need identified during the development of the WSAP. Key selection criteria used to assess proposals received were (1) whether the proposed project was included as an objective within the municipal Wetland Strategy and Action Plan and the IDP, and (2) signed pre-approval from the municipal manager had been obtained. ADM, in collaboration with Eco-Pulse Consulting CC, a KZN-based private consulting firm, submitted a proposal titled '*Focused wetland prioritisation and rehabilitation planning in Amathole District Municipality*' (hereafter referred to as the 'implementation project') to ICLEI Africa that aimed to assist with furthering the work already undertaken through the LAB: Wetlands SA Project, as well as contribute towards a number of goals outlined in the ADM WSAP.

Specifically the goal of the implementation project was to contribute towards improved

wetland management across ADM by improving wetland mapping within identified selected areas and building capacity within AMD to contribute towards future policy development with a focus on wetland management. The main objectives of the implementation project were to:

- Prioritise wetlands within one targeted Local Municipality within ADM for rehabilitation;
- Make an initial contribution to the detailed mapping of wetlands within the initially targeted Local Municipality;
- Identify priority wetlands for rehabilitation; and
- Develop a rehabilitation plan for one of the identified priority wetlands.



THE STORY

Strategic thinking, partnership development and sourcing of funding

Eco-Pulse Consulting were officially appointed in November 2017 and undertook the work in several phases. The initial phase involved undertaking a desktop regional prioritisation exercise to identify priority areas within ADM in which future wetland rehabilitation activities could be directed. Through extensive review of key factors such as opportunities for 'biodiversity maintenance', 'functional enhancement', 'water quality enhancement', 'sediment retention', 'flood attenuation', and 'stream flow regulation', as well as through the development of thematic maps that reflect the opportunities for wetland rehabilitation to contribute towards wetland management objectives in the municipality, the catchments upstream of the Xilinx Dam, Gcuwa Dam and iDutywa Dam within Mquma and Mbashe Local Municipalities, were identified as initial flagged priority areas where wetland rehabilitation could contribute most meaningfully to conservation efforts, water quality enhancement, flood attenuation, sediment trapping and stream flow regulating services.

Following detailed examination of socio-economic considerations around these three dams such as, population density, unemployment status and income, the Xilinx Dam within Mquma Local Municipality was identified as the most important dam supporting human livelihoods with ADM and consequently, the catchment upstream of the Xilinx Dam was selected as the area where focussed work would be taken further. This selection concurred with the findings of the preliminary National prioritisation process undertaken by the South African National Biodiversity Initiative (SANBI) in 2017.

Mapping and assessment of prioritised areas to identify priority wetlands

In the second phase of the project, Eco-Pulse Consulting CC undertook detailed wetland mapping and classification of all wetlands within the Mquma Local Municipality, where the prioritised catchment is located. Mquma Municipality is 5545 ha in size and within this area 1061 wetlands were identified. Of these 363 are seeps, 321 are unchannelled valley bottom systems, 200 are channelled valley-bottom wetlands, 157 are depression wetlands, 20 are estuarine floodplains and 2 are flood plain wetlands.

Following on from the initial mapping process, Eco-Pulse Consulting CC undertook a systematic screening of all the wetlands mapped in the catchment upstream of the Xilinx Dam (a total of 44 wetlands), to identify priority wetlands within this catchment to be considered for rehabilitation. The process was undertaken in two parts:

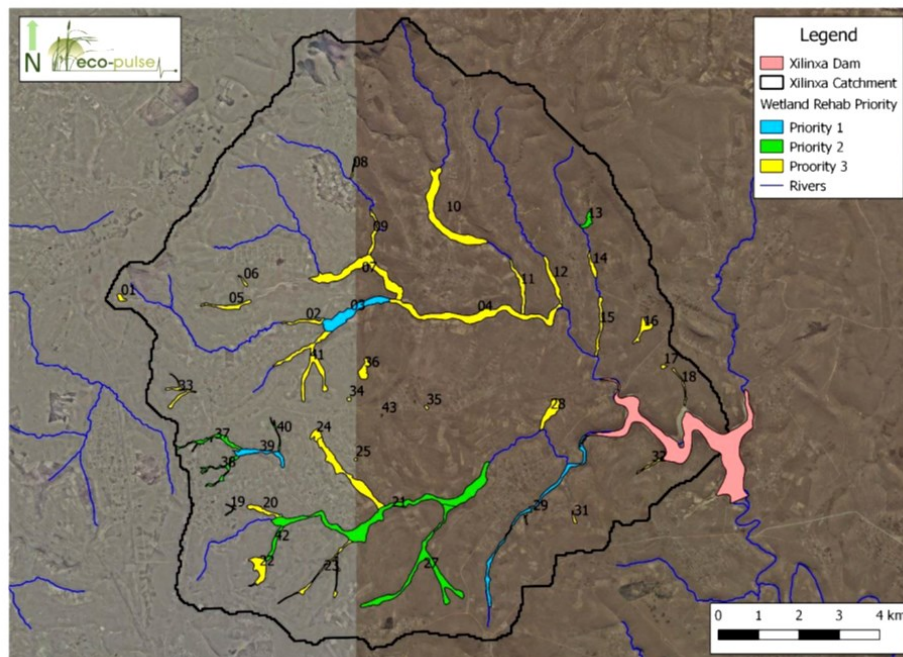


Figure 1: Desktop prioritisation indicating 'Priority Status' of wetlands identified upstream of the Xilinx Dam



1. Desktop prioritisation

Each wetland of the 44 wetlands was assessed against a range of criteria including 'opportunity for securing sediment', 'accessibility' and 'rehabilitation potential'. The desktop prioritisation process relied heavily on the experience of the Eco-Pulse Consulting CC wetland ecologists to identify opportunities for rehabilitation through the interpretation of aerial data and other supporting datasets. Once all the criteria were assessed, the wetland ecologist assigned a Priority score from 1 – 3 for each wetland with the aim of flagging wetlands that could provide the best opportunities for cost effective wetland rehabilitation. Just 3 wetlands were labelled as Priority 1 whilst 11 and 29 wetlands were labelled as Priority 2 and 3 respectively. The results of the assessment suggested that the majority of the wetlands within the Xilinxha Catchment are not suitable for rehabilitation due to the extensive levels of erosion.

2. Ground truthing prioritised wetlands

All wetlands that received a 'Priority 1' rating (W-03, W-29 and W-39) during the desktop prioritisation process underwent a field assessment to further evaluate their rehabilitation potential. Eco-Pulse Consulting CC conducted each of these site visits with technical staff from ADM in order to build capacity within the district to undertake similar work in the future. This not only provided a valuable opportunity for Eco-Pulse Consulting CC to share knowledge with municipal representatives on catchment issues within ADM, as well as the impact of erosion downstream, but also provided the municipal representatives with an opportunity to directly engage with and learn from wetland experts with detailed knowledge of wetlands within the district, as well as discuss the potential for wetland rehabilitation (and other land care interventions) to address catchment challenges.



Figure 2: Knowledge sharing discussions around catchment issues within ADM at one of the 'Priority 1' rated wetlands.



During the site assessments, careful consideration was given to the size of the intact sediment store within each wetland, the erosion risk as well as the actual feasibility and design of rehabilitation interventions. Following the field visits, the three Priority 1 wetlands were then re-rated using the original desktop criteria to produce a refined rehabilitation priority rating. Two of the wetlands (W-29 and W39) had their priority ratings reduced as part of this process. In both cases, this was largely due to the limited feasibility of effectively rehabilitating these wetlands and the anticipated high costs associated with rehabilitating these wetlands. As such W-03 was considered to have the highest wetland rehabilitation potential with the lowest associated cost.

As part of the final phase of the project, Eco-Pulse Consulting CC, with technical input from both environmental engineers and the technical staff from ADM, developed a detailed rehabilitation plan for W-03. Funding is now being collectively sourced by ADM and Eco-Pulse Consulting CC to implement the W-03 Wetland Rehabilitation Plan.

ABOUT THE PROJECT

The LAB: Wetland SA is being implemented by the ICLEI's Cities Biodiversity Center, which is coordinated by the ICLEI Africa Secretariat

Through enhanced awareness of wetlands, and the integration of wetlands and biodiversity considerations into local government planning and decision-making, the project will build the capacity of 11 municipalities to prioritise and effectively manage wetlands and biodiversity at the local level. The project will focus on government departments and working with community stakeholders to increase awareness and community buy-in.

ABOUT ICLEI

ICLEI - Local Governments for Sustainability is the leading global network of over 1,500 cities, towns and regions committed to building a sustainable urban future. ICLEI promotes local action for global sustainability, supporting cities to become sustainable, resilient, resource-efficient, biodiverse, and low-carbon.

ICLEI Africa Secretariat is the Sub-Saharan office of ICLEI and serves our local and sub-national government members across the region in line with the ICLEI Strategic Plan. ICLEI Africa also hosts the global ICLEI Cities Biodiversity Center.



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