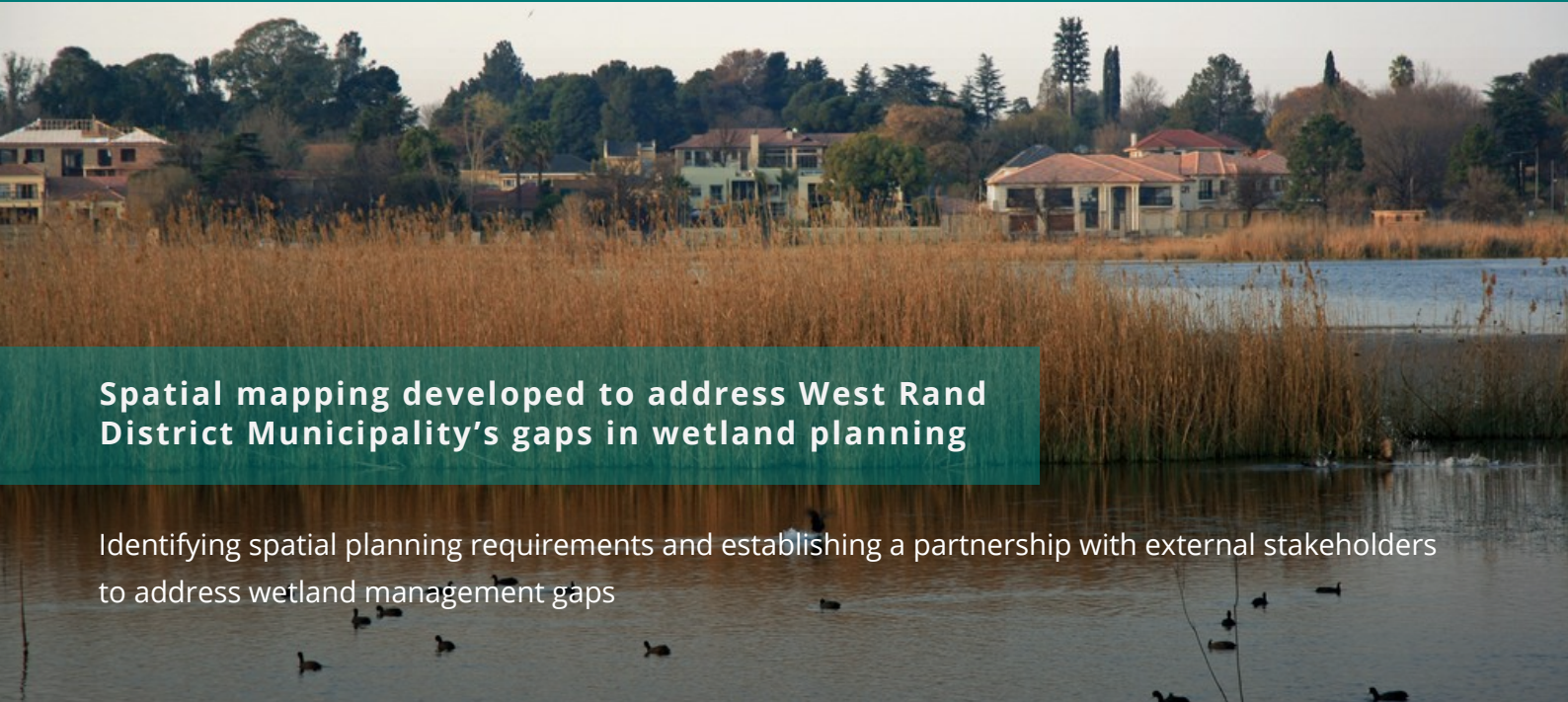


LOCAL ACTION FOR BIODIVERSITY: WETLANDS SOUTH AFRICA



Spatial mapping developed to address West Rand District Municipality's gaps in wetland planning

Identifying spatial planning requirements and establishing a partnership with external stakeholders to address wetland management gaps


Lack of sufficient wetland data and maps has meant that municipal officials are curtailed in their ability to make effective decisions around wetland planning in the face of development. This has resulted in wetlands historically being degraded or even lost with an associated loss of ecosystem services to West Rand District Municipality (WRDM).

Through a Wetland Strategy and Action Planning process, facilitated by ICLEI Africa as part of the Local Action for Biodiversity: Wetlands South Africa project, WRDM identified a clear need for a detailed wetland spatial layer to support wetland management going forward.

In October 2017, WRDM was awarded funding through the LAB: Wetlands SA project implementation competition to develop the required spatial layer. The detailed wetland spatial layer has since been developed

and is now supporting the municipality with making better assessments of developmental trade-offs and improved management of wetlands overall.





“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

WRDM is one of the most rapidly developing districts within the Gauteng Province and is the biggest contributor to the provincial economy out of all the district municipalities (excluding metropolitan municipalities) in Gauteng. Dominant sectors within the district include gold and uranium mining, urban expansion, construction and manufacturing.

Rapid development and mining particularly, however, have come at a cost to the municipality historically with a large proportion of the district’s wetlands being degraded, or even lost, due to the direct impacts of mining, urban expansion, as well as consequential impacts such as contamination through sewage, storm water runoff, chemical and oil seeps, as well as pollution and the spread of invasive alien plants.

WRDM currently lacks sufficient spatial data which support the appropriate assessment of trade-offs between development and the sustainable management and use of wetlands. This curtails the ability of decision makers to make informed decisions towards sustainable development within the region and means that the municipality’s ability to protect natural assets such as wetlands is limited.

WRDM 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. One of the key gaps identified during this process is the need for a consolidated spatial map indicating wetland localities and their status. This case study provides a detailed overview of how this gap is being addressed.

WHY WETLANDS ARE IMPORTANT TO WEST RAND

The wetlands within West Rand 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:

These include:

- 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 West Rand District Municipality unique?

West Rand District Municipality is located in the Gauteng Province of South Africa and covers an area of 4,095 km². The Municipality falls within the Grassland biome and is home to a disproportionately high percentage of rare and threatened species and threatened ecosystems. Numerous wetlands, of high ecological value and exceptional beauty, are found throughout the municipality and provide crucial habitat for not only a number of species specially adapted to the Grassland Biome but also for a variety of nationally critically endangered flora and fauna species.

THE STORY

Establishing a Partnership and Securing Project 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 would address 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 WRDM Wetland Strategy and Action Plan and the IDP, (2) signed pre-approval from the municipal manager had been obtained.

WRDM, in collaboration with Prime Africa, submitted a proposal titled *'Gap Analysis, Baseline Resource Assessment and High-Level Mapping of Wetlands in the West Rand District Municipality'* (hereafter referred to as the 'implementation project') to ICLEI Africa that would address their critical need to undertake detailed consolidated spatial mapping to support the municipality with overcoming their wetland planning limitations. The proposal was one of 31 applications made for the funding and was selected for implementation as it not only met the key selection criteria but also had potential for long term benefit to WRDM. The key objective of the implementation project was to undertake a gap analysis of the existing data and develop an easy to use, high level wetland spatial layer with baseline data for the WRDM.

Developing a Wetland Spatial Layer

Prime Africa were officially appointed in November 2017 and undertook the work in several phases. The initial phase involved conducting a 'gap analysis' to determine the current extent of wetland knowledge within the municipality. This phase entailed an extensive literature review of all available wetland materials ('data mining') to identify all potential sources of data that could be useful for classifying wetlands and consultations with municipal officials from WRDM, as well as external stakeholders.

In the second phase, all identified data sourced during phase 1 was screened and collated to develop a draft preliminary high-level data catalogue and draft baseline spatial layer of wetlands within WRDM. Initial results from these datasets showed that only 9 500 Ha of wetlands were formally included in existing spatial datasets. As this was deemed to be a gross underestimation of the actual wetland extent within the 400 000 Ha study area, a third phase was initiated in the form of a desktop level assessment of wetlands. During this phase, the entire region was methodically investigated to identify additional wetlands not included in the current spatial planning datasets. Over 12 000 additional hectares of wetlands were identified through this 'fine-scale combing' approach. This additional data was added to all the original data available to create a detailed spatial layer of wetlands within WRDM.



On the 1st of August 2017, **West Rand District Municipality pledged to protect their biodiversity** by signing the Durban Commitment.

THE STORY

Once the final wetland spatial layer was completed, all wetland features identified throughout the district were then classified based on their hydrological, climatic and geomorphological characteristics, as well as their significance in the socio-economic and environmental landscape. The purpose of this additional task was to provide decision-makers with an additional layer by which to assess potential trade off scenarios.

Prior to completing the project, Prime Africa also ran a 'capacity transfer' programme whereby selected staff within the municipality received training on GIS methods, wetland ecology and interpretation of the wetland spatial layer to help resource economic valuation. This was done to ensure that the wetland spatial layer is utilised on a daily basis and there is uptake of this layer into WRDM's planning legislation.

Benefits of a detailed Wetland Spatial Data for West Rand District Municipality

The final results of the implementation project provides WRDM with an improved high level understanding of the localities, risks and threats to the wetlands located within the district. Additionally, the detailed wetland spatial layer provides WRDM with a desktop platform for low level assessment of the functionality, condition and type of wetlands within the district.

The benefits of having a deeper understanding of the location of wetlands within the district, as well as their function, type and state are numerous and are summarised on the following page:

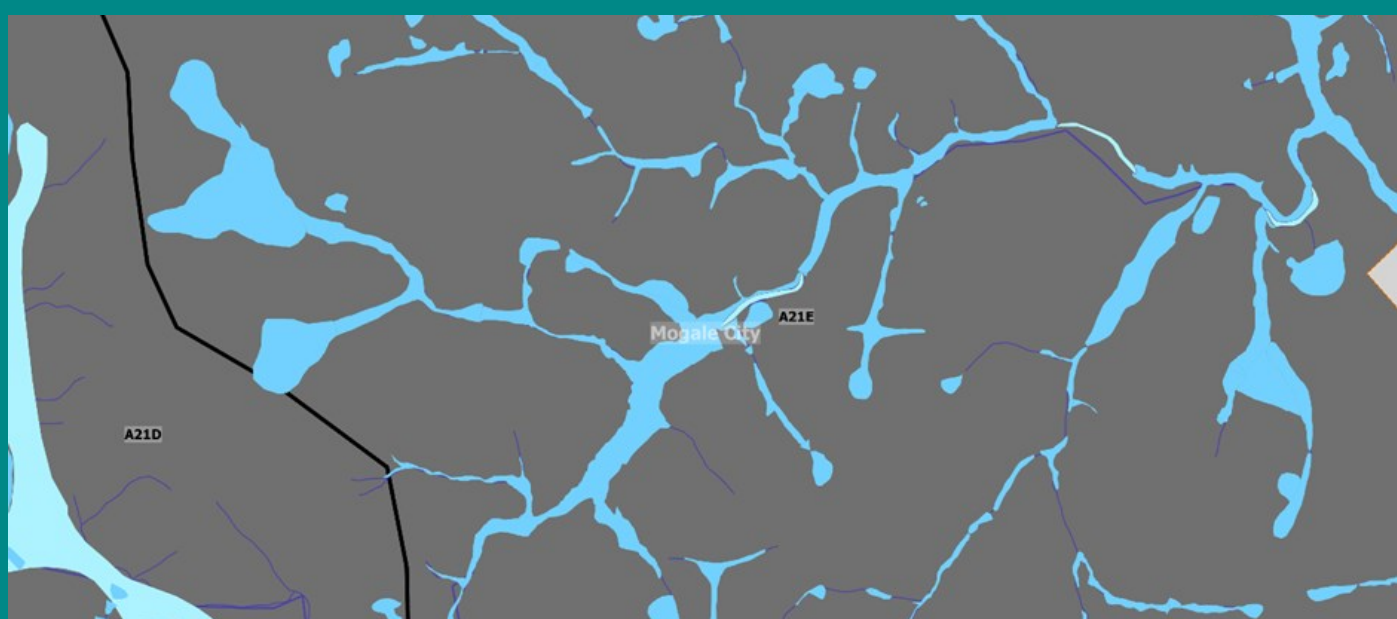


Figure 1: A sample section of the High level Wetland Spatial Layer of West Rand District Municipality

Benefits of a detailed Wetland Spatial Data for West Rand District Municipality

- The data set and spatial layers provide municipal officials with the necessary wetland information required to make effective and informed decision making regarding land use, zoning, reviewing building plans and when planning new developments.
- By having a clearer understanding of the locality and status of wetlands, WRDM will be able to provide detailed input into applications for Province and/ or National for environmental authorisations, and mining permits.
- A detailed spatial district level wetland layer, such as the one developed for WRDM, allows for improved coordination of planning at both the local and district level;
- The wetland spatial data can be included in Bioregional Plans, thereby greatly enhancing the value of such plans.
- Lastly, the development of a detailed wetland spatial layer will allow for the streamlining of both urban and rural initiatives.

The above mentioned benefits will allow the municipality to make better assessments of developmental trade-offs and improve the management of wetlands overall. This will mean not only long term benefits for the wetlands themselves, which will benefit from coordination planning, but also for the communities that depend on the services (such as clean water, medicine, building materials and food) that wetlands provide to support their livelihoods as well as flora and fauna that depend on these systems for their survival.

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.

