



## Adopt Moreletaspruit/ Neem Moreletaspruit Aan

### Newsletter/Nuusbrief 22, February/Februarie 2018

The Adopt Moreletaspruit Forum's **Evening of Free Talks** in October 2017 on the theme: **Wastewater: Asset or Liability in the Moreletaspruit Catchment** was well attended. The talks by Dr Michael Silberbauer, Mr Kerneels Esterhuyse and Dr Carin van Ginkel led to much lively discussion and, following many requests, Michael Silberbauer has adapted his talk for us and we attach it as part of this newsletter.

March is **Water Month** and to mark this, the Forum will host an event in Faerie Glen NR to demonstrate the use of miniSASS testing as a Citizen Science activity. The Walter Sisulu Environmental Centre (WSEC) will bring learners from some schools in Mamelodi and learners from two schools in our catchment area have also been invited.

#### Friends Groups/Vriendegroepe



**Friends of Colbyn Valley**, in collaboration with ARC ISCW and various other partners, celebrated **World Wetlands Day** with their annual 'Learn about Wetlands' event. Over 170 children took part in a range of activities, including a bird ringing demo, miniSASS, building a simple wetland model, and a guided walk to discover wetland soils and plants. (*Above left*: crossing the Hartbeesspruit on the Wetlands Discovery Walk and *right*: Sandiso Dlamini from TUT Green Arcadia guides his group on building a model of a wetland.

**Vriende van Faerie Glen NR** het 'n voëlkykuitstappie in Januarie aangebied en het aksies teen indringerplante in Januarie, Februarie en twee in Maart beplan.

**Vriende van Moreletakloof** het 'n skerpioenuitstappie in Januarie gehad en beplan 'n boomuitstappie vir 24 Februarie, 'n rotswandeling vir 17 Maart en 'n Water Ekodag vir jong kinders en hul ouers vir 24 Maart

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Facebook Group – Adopt-a-River Moreleta



# Wastewater in the Moreletaspruit - Where does it come from, where does it go and why should I care?

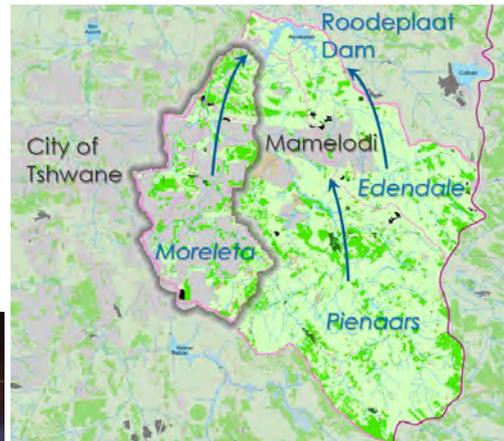


Michael Silberbauer, Adopt Moreletaspruit Forum, 2017

## Moreleta Spruit catchment

Every river catchment area is different and what follows is specific to the Moreleta Spruit. The other rivers feeding into Roodeplaas Dam are the Pienaars River and Edendale Spruit.

## Water sources



Where does the wastewater come from? Let us begin by asking where the water comes from. For the Moreleta, mostly from the sky. While some private boreholes exist in people's gardens, the Roodeplaas Dam catchment geology does not support

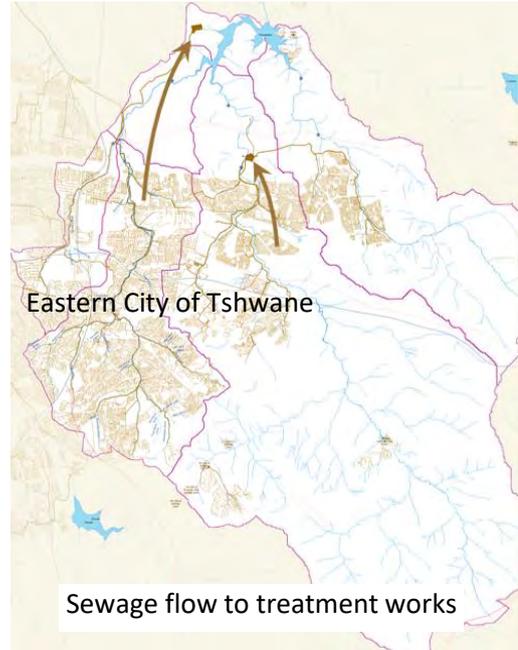
wonderful groundwater resources such as those further west, in the headwaters of the Apies River at the Fountains.

The Moreleta-Pienaars-Edendale catchments collect enough water from the sky so that in an average year they can fill Roodeplaas Dam to capacity. In dry years, a lot less, in wet years, a lot more. You can even collect it in tanks, though this is a costly exercise.



However, Roodeplaas Dam is a way downhill, so the water supply for the people of the Moreleta catchment comes from sources further uphill, mainly Rand Water and perhaps a little from Rietvlei Dam.

So where does Rand Water get its water from? Again, from the sky. The bigger the catchment area receiving water, the more sky is available, and the greater is the supply of water. So, some drops of water in your tea come from as far as Lesotho, the Kwa-Zulu Natal escarpment and the Vaal River headwaters way over in the east.



## Wastewater

Right, so that is where the water comes from. Now what about the wastewater? Well, all the good people in the Moreleta catchment work tirelessly to ensure a constant supply. The water comes into our houses, offices, shops and a few small industries, and leaves shortly afterwards as wastewater. Only a small proportion of residents are not connected to the sewage network, so most of the wastewater goes to Zeekoegat wastewater treatment works next to Roodeplaat Dam. A similar arrangement exists for the Pienaars and Edendale catchments, where the wastewater goes to Baviaanspoort works for treatment.



Lest us pause for a moment in the Moreleta catchment and look at where reality and theory diverge. Firstly, the water supply network is not always watertight, mishaps occur, and valuable drinking water contributes to that modern marvel, the Moreleta flowing in winter. Secondly, the sewage network is also leaky. Deliberate sabotage includes theft of covers and dumping of rubble in the sewage – unwitting abuse consists mainly of allowing stormwater to enter the sewage network.



Both have the effect of allowing sewage to exit the network, either by damming or by causing the flow to exceed the rated capacity.

Just a note for interest: often sewage leaks begin long before the human nostril is triggered. Animals have a much better sense of smell, and some local authorities in the United States use trained sniffer dogs to give early warning. Cats have no such sense of duty.

## Solid waste

Other waste sources include solids – the deliberate discarding of solid waste such as tins, glass, plastic, paper in the catchment – many do not realise gravity causes all items to creep downslope to the nearest watercourse. Then there is the even more incomprehensible dumping of various larger objects such as mattresses and tyres directly into the streams.



## Where does it go?

Let us move on now to the next phase of the story of where the wastewater goes. Roodeplaat Dam receives about 40 million cubic metres of water—that's a lot, let's call it a damful—per year, by design. On top of that, another damful arrives via the wastewater works and the various leaks that we have seen. The second damful means that the dam is full most of the time, but the downside is that the water, even if it goes via the wastewater works, still contains many contaminants after treatment. Even seemingly benign substances such as nutrients are there in abundance, and have unwanted effects.

From Roodeplaat Dam, some water flows to the water treatment works north of the dam, for purification to domestic water use standards. Some also, by law, must flow downstream, where other users abstract it and use it for agriculture and domestic supply. The river joins up with its poor cousin, the Apies, and then enters Klipvoor Dam. From there, it joins the Crocodile River, then the Marico, becoming the Limpopo. It passes under Beit Bridge, leaves South Africa at Crooks Corner and flows to Mozambique where it enters the ocean at Xai-Xai. What happens in the sea is a story for another time.

