



## **Adopt Moreletaspruit/ Neem Moreletaspruit Aan**

**Newsletter/Nuusbrief 21, September 2017**



### **Roodeplaat Dam and why we should care about it.**

We know that the Moreletaspruit flows into the Roodeplaat Dam but not everyone is aware that the water from our sewers also flows into the dam - after treatment of course. The dam was originally completed in 1959 as an irrigation dam at the confluence of the Pienaars River and the Edendale and Moreleta/Hartbees Spruits. Today it mainly supplies water for urban use. The dam is always almost full as it is not reliant on rainfall. Depending on the season about 27% of the inflow comes from the Moreleta/Hartbees catchment, about 22% from the Zeekoegat Waste Water Treatment Works, about 43% from the Pienaars River and the Baviaanspoort Waste Water Treatment Works, which discharges effluent into the Pienaars River seven kilometres upstream of the dam, and about 8% from the Edendale Spruit. Most of the water going through our houses to the sewage works came originally from Rand Water at Vereeniging and not from our catchment at all – some even from as far away as Lesotho.

South Africa gets an average of about 497 mm of rain per annum, just over half the world average. Our population keeps on increasing. So to have enough water our waste water must be recycled and used again about two and a half times according to Prof Anthony Turton. When we flush the toilet or pull out the bath plug the water does not disappear into the great unknown. It flows through the sewers along the Moreletaspruit to the Zeekoegat Waste Water Treatment Works where it is treated and released into the dam. Water is then taken from the dam, treated and sent as drinking water to the suburbs such as Montana and Pretoria North, while some of it flows on to be used by farmers, towns or wildlife downstream.

Rand Merchant Bank, sponsors of the Olympic rowing team which practises on the dam, organised a workshop titled **Roodeplaat Dam Rehabilitation** following concerns that

the dam is eutrophic because of phosphorus and nitrogen coming from urban storm water runoff and the sewage works. This in turn encourages the growth of algae and water hyacinth. The Baviaanspoort Waste Water Treatment Works is mainly responsible and needs to be upgraded. The other problem is litter from all the suburbs upstream.

### **Visit to the Zeekoegat Waste Water Treatment Works, the Roodeplaat Dam and the Roodeplaat Water Treatment Works**

Following this workshop some of us visited these sites to gain more information. Many thanks to Jeannie du Plessis for organising and to Dr Mike Silberbauer of DWS Resource Quality Information and Kerneels Esterhuyse of CoT Utility Services Department (all members of our Forum), for facilitating the visit and giving presentations.

**The Zeekoegat Waste Water Treatment Works** was recently upgraded and is currently receiving 65 megalitres of sewage per day though it can handle up to 85 megalitres. Kerneels gave us a presentation and then acting manager, Jannie Frauendorf, took us on a tour. Interestingly the plant is designed to treat sewage of a certain strength, not clean water, so too much dilution (e.g. if storm water gets into the sewers) is not good but neither is too little water. The sewage first passes through three different screens (*below left*) to remove solids such as rags and grit.



The water then remains in the primary settling tank (*above right*) for a few days before being sent to the balancing tank and then to the activated sludge process (*below left*).



This is known as the Bardenpho Process and was developed in South Africa. The water is aerated and micro-organisms suspended in the water act to remove nitrogen, phosphorus and other nutrients biologically. We were told that commercial toilet cleaners interfere with this process by killing the micro-organisms and were advised that it is better to use cider vinegar or white spirit vinegar to clean our toilets. (In fact vinegar and bicarbonate of soda can do most household cleaning jobs in an environmentally friendly way.) From here the

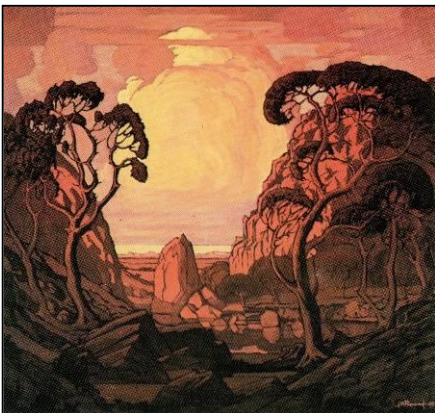
water goes to the secondary settling tank and then before being discharged into the dam the water is disinfected for fecal coli.

Conventional treatment works cannot remove all Emerging Contaminants such as hormones, residues from prescription and other drugs, chemicals from cleaning products, pesticides, herbicides, as well as plastic microbeads, plastic microfibres and microplastics.

**Roodeplaat Dam** looked very clean on the day we visited and there were only a few water hyacinths around the edges. We were privileged to be allowed on to the dam wall which is not open to the public. There we were shown where the water is abstracted to be sent to the Water Treatment Works.



(Above right) The AMF team, Louise Kritzing, Judy Scott-Goldman, Erica Bergman, Peter Teurlings, Carol Martin, Jeannie du Plessis and Mike Silberbauer on the dam wall.



(Left above) A pointed rock just downstream of the dam wall photographed from the top of the wall and (left below) a painting by Pierneef of what is believed to be the same rock. This was painted long before the dam was built and the artist would have been sitting next to the Pienaars River about 50 metres upstream of where the dam wall is today. Thanks to Mike Silberbauer for the image and information.

At the **Roodeplaat Water Treatment Works** we were met and guided by manager, Lesiba Tema. He showed us where the water from the dam comes into the treatment works (*below left*), how it is tested at every stage, and from where it is pumped to a reservoir. We needed quite a head for heights for this tour but were impressed with the well-managed state of the facility.



### **What can we, the public, do to contribute to the health of our water?**

Treat the water leaving our homes with the same respect that we would like those upstream of us to treat the water which will become our drinking water.

Don't litter. Litter gets into our rivers by wind or storm water.

Use only natural or organic cleaning products, fertilisers and pesticides. Live a healthy lifestyle in order to reduce our need for medications and drugs. Don't pour fats and chemicals down drains. Don't throw any foreign objects into toilets. Avoid plastic. Plastic has contaminated fresh and sea water all over the world. For example, a fleece jacket can shed 250 000 plastic microfibrils per wash. Microplastics will stay in the water for 1000 years and are known to contain and absorb toxic chemicals.

### **Important note: An Evening of Free Talks on 12 October**

We will have our annual Evening of Free Talks at the Koinonia Room of the DRC Lynnwood at **18:00 on 12 October** on the relevant subject of the management of waste water. For more information or to book, send an email to [anneli.kuhn@gmail.com](mailto:anneli.kuhn@gmail.com).

### **Annual Guided Hike along the Moreletaspruit on Saturday 16 September**

About forty enthusiastic hikers walked from Moreletakloof to the Pioneers House. Thanks to Nature Conservation and the team from our Forum for a wonderful morning!



Anneli welcomed the hikers at Moreletakloof where Jeannie and helpers served coffee and rusks (*above left*), Gunther leading the hikers through Serene Valley in Garsfontein (*above right*), arriving at Murrayfield (*left below*), and having some refreshments provided by Carol and Anneli in the shade at Murrayfield. Some hikers ended their walk here but most walked the full 16 km to the Pioneers House.

## Friends Groups/Vriendegroepe

In **Ecoglen** het Mej Aarde streeks-finalis, Annemieke van Aarde, in Junie, 'n skoonmaak aksie gereël om Wêreld Omgewingsdag te vier. Sy is gehelp deur raadslid Pieter van Heerden en 35 leerlinge van Maragon Olympus Private High School.

Die Vriende het ook 'n skoonmaak-aksie vir Mandeladag in Julie gehad.



**Friends of Colbyn Valley** had their AGM in August, followed by a talk on "Light Pollution" by Johan Smit of the Astronomical Society of SA. He said that security and other lights should be facing down "if you can see the globe it is wrong" and not out or upwards. He said "if you have never seen your shadow under the Milky Way, you have never seen the Milky Way". Light pollution is preventing us from seeing the stars.

**Vriende van Moreletakloof** het twee eco-dae vir kinders gehou asook baie indringerskoonmaak-aksies. Hulle het ook vir 'n groep paraplegiese pasiënte van die George Mukhari Hospitaal 'n onvergeetlike dag in die natuur gerêel.

Lede van Ford Motor Company het hul 'week of caring' in Moreletakloof deurgebring en die voëlskerm en toilet opgegradeer.

**Vriende van Faerie Glen NR** het 'n geologie-uitstappie met Prof Adam Bumby in Julie aangebied. Hulle het gereelde aksies teen indringerplante gehou. Vir boomplantdag het hulle die boom van die jaar *Ziziphus mucronata* in die Arboretum geplant en 'n boom uitstappie gebied.

**Friends of Serene Valley** hosted 7 Aurecon employees to do a clean up for Mandela Day and the Friends themselves removed alien vegetation. They had further clean ups and also a Tree Walk for Arbour Day.

**Vriende van Skuilkrans** het in Julie 'n gesins-staptog langs die rivier gedoen.



## Contact Details/ Kontak-besonderhede

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Facebook Group – Adopt-a-River Moreleta