

THE IMPACT OF CLIMATE CHANGE ON THE CAPE FLATS AQUIFER

The Cape Flats Aquifer

The “Cape Flats Aquifer” covers a surface area of 630 km² and stretches from False Bay to the Tygerberg Hills and Milnerton – which is the equivalent of more than 56 football fields.

The CFA is particularly important for water security in Cape Town. This importance has become even more prominent following the city’s water crisis in 2018. Scientists suspect that the demand for groundwater is likely to only increase with climate change as extreme events, such as droughts, will become more intense and frequent.

What is an Aquifer

An aquifer is a body of rock and/or sediment that contains groundwater. Groundwater from aquifers can be discharged naturally at springs and wetlands, or through manmade wells. Aquifers recharge themselves as rain falls on natural areas and seeps into the ground.

It is important to conserve natural areas to ensure that the natural flow of the water, the recharge and discharge, is not impeded and that the water that is recharging the aquifer it not contaminated.

Why is the Aquifer important

The CFA plays an important role in building the resilience of Cape Town in the face of climate change and population growth. As the temperatures in Cape Town are expected to increase, pressure on groundwater resources will increase as droughts will become more frequent.

Cape Town is in urgent need to improve its water resilience and the CFA could be part of the solution.



THREATS TO THE CAPE FLATS AQUIFER

The Cape Flats Aquifer has a high, to very high, threat of contamination. The water quality in some parts of the Cape Flats Aquifer has deteriorated so much in the past years that the groundwater in those areas is no longer drinkable.

Waste disposal sites, sewage treatment works, cemeteries, industrial activities, informal settlements and agricultural activities are all responsible for the contamination of the groundwater.

Urbanisation has led to the loss of natural dune and wetland filter systems, resulting in poor quality water entering False Bay and affecting its natural ecosystems.

Climate Change Threats! Lower precipitation and higher temperatures will increase salinity of the water, as the evaporation of water leads to higher concentration of salts.

Climate Change Threats! Floods and extreme precipitation events lead to higher stormwater runoffs and overload of wastewater treatment plants, increasing sediment nitrogen, phosphorus and nitrate polluting the groundwater.



SOLUTIONS

Reduce and limit contamination to the CFA from stormwater, leaking canals, chemicals and fertilisers and sewerage systems.

Supply non-potable groundwater to small-scale users for irrigation to reduce the demand on the aquifer. These users include schools, sports fields, parks and community gardens.

Protect or build natural or manmade wetlands and vleis to cleanse the water. According to studies, Zeekoevlei and the Philippi Horticultural Areas have the greatest potential to recharge the Aquifer. Protecting these areas from developments and contamination is crucial.

Use artificial recharge processes to supply the Aquifer with good quality water. This will help to circulate groundwater and dilute and clean the initially contaminated water.