CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Coastal Water Quality FAQ

1. What is the purpose of Cape Town's stormwater system, and can I dump my waste in the stormwater inlets on the sides of the roads?

Answer:

The City has an extensive stormwater network that is designed to prevent the flooding of roads and the built environment during rainfall events. The rainwater enters the stormwater system through inlets on the sides of the roads, and is then channelled underground, and transported via stormwater mains to the sea. This runoff is not treated, or diluted, but goes straight into the sea.

The only substance that should end up in the stormwater network is runoff during and after rainfall events. This means, if it has not been raining, nothing should flow out of the stormwater system. But this is, unfortunately, not the case in Cape Town.

Some residents and businesses use the stormwater system as a convenient dumping site to get rid of pollution – be it domestic animal waste, fat, oil, industrial coolants, or other pollutants. All of this waste goes straight into the ocean and has a huge impact on the quality of the water where we swim, surf, and play. This explains why we often find that the water quality is poor in coastal areas close to stormwater outlets.

The extent and severity of the abuse of Cape Town's stormwater system – either knowingly, or because of ignorance – is evident from the following two examples.

The first was from a pilot study conducted by the City to test the feasibility of an environmentally friendly method of exposing stormwater outflow to UV light to sterilise the stormwater before it enters the nearshore coastal environment.

Unfortunately, the UV bulbs were covered in fats and oils within hours, and in the end, it rendered the project ineffective and a failure. We suspect that the fats and oils that smothered the bulbs originated from the restaurant industry illegally discharging these substances into the stormwater system.

The second was when we found industrial coolant entering a stormwater drain in Adderley Street in the middle of the Cape Town CBD. We traced the source of the discharge to the top of a multi-storey building where it was being used in an industrial cooling system.

When we spoke to the technician responsible for applying the coolant in servicing the cooling system, the technician acknowledged that it was 'industry standard' to discharge excess coolant into the stormwater system, despite it being illegal to do so.

Although the incident may have taken place in Adderley Street in the centre of town, this liquid ultimately found its way to the sea via the stormwater system.

These two examples and real events reveal the systemic challenges that we face as a City in respect of managing, and improving, coastal water quality in Cape Town. We need businesses and industry to respect the stormwater system and to get rid of waste in a responsible and sustainable manner. We also need residents to respect the stormwater system and to report anyone who dumps illegally into the system.

Pollution is everybody's problem. Any long-term solution should be founded on a collective response and a shared responsibility between all of us who live and work in Cape Town.

2. Why does pollution disperse or dilute quicker along the Atlantic coastline than along the False Bay coastline?

Answer:

The term ‘dilution’ refers to the process of reducing the concentration of a pollutant by mixing it with uncontaminated seawater to reach an acceptable level for ecosystems, and for recreational activities such as swimming.

In the coastal environment, dilution and the effect of waste streams or pollution is determined by specific coastal processes and physical characteristics which are unique to any specific coastline.

Now, if we consider our Atlantic coastline versus our False Bay coastline: both have unique and distinctive physical characteristics and coastal processes. Therefore, the behaviour and dilution of similar waste streams will vary significantly when discharged along our Atlantic coastline versus our False Bay coastline.

So, what are the main differences between our Atlantic and False Bay coastlines?

It is the wave climate and our dominant wind directions; the water depth; and the configuration of the coastlines, which basically means the actual ‘shape’ of the coastline.

Our Atlantic coastline is directly exposed to south-westerly waves; while the False Bay coastline is partly sheltered. Thus, there is less wave energy and this limits the dilution and transporting capacity of waste streams. If we look at our dominant wind directions, in summer time, our southerly and south-easterly winds will blow directly onto our northern and southern coastline in False Bay, which will tend to trap any waste stream within the surf zone.

Whereas along our Atlantic coastline, the southerly and south-easterly winds will blow offshore.

In terms of seabed levels, what we also refer to as ‘bathymetry’, it is significantly shallower in False Bay and therefore you have more shallow water. This results in smaller wave heights, therefore again, les wave energy. With the reduced wave energy, as well as the shallow water, the assimilative capacity in False Bay is less. Basically, what that means is that False Bay has less capacity to ‘cleanse’ itself.

The coastline configuration is an important consideration. Current circulation patterns in False Bay are very complex due to the shape of the bay. Therefore, waste streams and pollutants will tend to accumulate in certain areas along the bay.

Thus, to put it simply: our False Bay coastline has less capacity to deal with waste streams or pollution compared with our Atlantic coastline due to the different physical characteristics and coastal processes.

3. What impact do all of us – residents working and living in Cape Town, business, and visitors – have on our environment?

Answer:

Cape Town is a relatively large, industrialised city. All of us living and working here, along with visitors to the city eat, buy, produce and get rid of waste in this environment on a daily basis.

Collectively, we produce 500 million litres of wastewater per day. All of this waste or pollution finds its way into sewers, the stormwater system, rivers, and ultimately the sea.

The City relies on its sewer network and wastewater treatment works, together with the assimilative capacity of the environment, to assimilate this wastewater effluent on our behalf. However, it is increasingly being recognised around the world that this approach is not sustainable.

Understanding the full dimensions of the challenge allows us to develop appropriate responses to try to limit our collective impact on our environment and coastal waters.

Clearly new approaches are needed.

Firstly, we all have to admit and acknowledge that we have an impact on the environment and we have to develop a collective understanding of the extent of this footprint. With this understanding comes the reality that we will have to change our collective behaviour in relation to how we consume, produce and get rid of waste. Then we need a shared sense of responsibility to work together to find and implement more sustainable solutions.

The City has committed itself, in its new Water Strategy, to transitioning to a water-sensitive city by 2040 that integrates the urban water cycle, builds resilience and protects Cape Town's sensitive natural ecosystems. This is an ambitious undertaking, and one that will require support from all Capetonians as it will only succeed if we change our behaviour.

Going forward, the City will improve its information and disclosure about coastal water quality.

Firstly, we will Improve information by increasing the number of water quality sampling points at recreational beaches and introducing weekly sampling during the summer at popular swimming beaches.

Secondly, we will report annually on the quality of our coastal water.

We will facilitate public access to information by creating a web-based portal where the public can access updated information on coastal water quality every second week.

The City cannot face this challenge on its own. We are committed to finding and implementing solutions, but we need residents to share this responsibility with us by changing their behaviour. To support and promote this behaviour change, the City will:

- Develop and implement ongoing public education and awareness-raising campaigns and programmes on citizen responsibility; and actions and behaviours to minimise and mitigate the pollution of Cape Town's waterways and beaches;
- Begin labelling stormwater drains/grids/covers with notices reading, 'This drains to the sea' to drive home the message that whatever enters the stormwater system – be it runoff from rainfall events, illegally dumped waste, fat and oil, or sewage due to illegal connections – ultimately ends up in our oceans;
- Strengthen our monitoring and enforcement capabilities related to illegal developments and activities affecting Cape Town's natural water ecosystems; and
- engage with the other appropriate regulatory bodies with a view to reducing pollution risks (at source and through the product or service chain) to Cape Town's natural water ecosystems.