

Why is there bacteria in the water?

Bacterial contamination can arise from a variety of sources such as faeces from dogs, cows, ducks and seagulls, cats, marsupials and rabbits. Bacteria may also be from sewer, if underground sewer pipes are cracked, or if heavy rainfall causes an overflow of sewer which is washed into our waterways.

Poor water quality in urban areas is not a new phenomenon, and is a common issue in both developed and developing countries.

What is Central Coast Council doing about water quality in Terrigal Beach?

In January 2019, Council commenced the Terrigal Catchment Audit.

The Terrigal Catchment Audit is a comprehensive program undertaken as a partnership between Council and the NSW Government. The audit is assessing possible sources of pollution within the Terrigal Catchment and their impacts on long term water quality in the Beach, Lagoon and Haven.

The audit extends the Beachwatch program sampling to assess water quality right along the beach from the Lagoon to the Haven and is designed to move systematically up through the catchment, testing and investigating both the sewer and stormwater networks to understand pollution sources and identify solutions.

What are the NSW Government doing with Council?

The NSW Government and Central Coast Council are working together to address poor recreational water quality at Terrigal Beach and surrounding areas. Central Coast Council is currently conducting a catchment audit for Terrigal Beach to identify sources of pollution and find solutions to improve water quality.

The Department of Planning, Industry and Environment is supporting work being undertaken by Council by employing innovative DNA based techniques to identify whether sources of faecal contamination in the catchment come from human or animal sources. This will enable targeted mitigation measures to be developed to improve water quality at Terrigal. The major audit by the NSW Government and Central Coast Council will assess the off-shore zone where swimmers cross to Terrigal Haven, assess hydrological mechanisms driving microbial movement, reservoirs for bacteria and their response to environmental conditions, volume and microbial load or broader environmental impacts from other pollution sources in the catchment. It is evident that further sampling of ocean conditions is needed to understand the hydrodynamics of Terrigal Beach and Terrigal Haven in response to lagoon openings.

Can we get the data from the audit?

Council is not currently releasing data due to the sensitive nature of the project.

The data may directly or indirectly identify houses or businesses with known or unknown breaks in sewer pipes or illegal connections. If private property is implicated throughout the audit, Council will provide an opportunity for people to do the right thing. If private landowners do not fix illegal connections or cracks affecting stormwater, Council will commence regulatory actions.

Where Council infrastructure is identified as a source of pollution, these locations will be immediately scheduled for infrastructure refurbishment, with outcomes officially reported and made public.

Ocean based water quality data will be available on request for the period covered in official reports.

How long will the audit take to complete and when will we see the water quality improve?

There is currently no timeframe available for the completion of the Terrigal Catchment Audit.

Catchment audits are a complex process which need to be managed adaptively in response to data, as pollution can come from just one, or thousands, of sources. The process of identifying sources of pollution requires a systematic sampling program with various factors affecting predicted timeframes including:

- Possible detection of various sources of pollution.
- Timeframes required to receive testing results for reliable indicators of pollution.
- Water sampling needing to be conducted in both dry and wet weather to understand pollution variants.
- Detection and repair of cracks or illegal connections in stormwater and sewer systems.
- Collection and analysis of data by trained scientists to assess outcomes as information arises.

After works are completed, it will take some time to determine if the improvements have made a difference to water quality. This is due to a range of factors including natural variability, the presence of natural sources of bacteria which may affect results, and the length of time required to collect enough samples to meet the requirements of the Beachwatch Program.

The Beachwatch Program and State of the Beaches Report results are based on 100 samples at a given location as specified by the *National Health and Medical Research Council (2008) Guidelines for Managing Risks in Recreational Waters*. On the Central Coast, Beachwatch samples are collected weekly during the swimming season and fortnightly during the cooler months. Consequently, it can take up to three years to collect 100 samples and for the improvements to show in the State of the Beaches Report.

To allow Council to measure water quality improvements in the interim, we sample regularly at pipes as they enter the beach. The results from this sampling program will more clearly and quickly assess if water quality from the pipes has improved in response to remediation works and improved catchment management. Any improvements to water quality will be reported as part of the audit.

Is that raw sewage/effluent in the stormwater pipes?

Dirty or pungent water does not indicate raw or treated sewage. There are many possible reasons why water may look and smell bad, including activities such as car washing, fertilising gardens, erosion and decomposing vegetation. Materials in water from catchment activities provide good conditions for natural bacteria to grow and the decomposition may cause a smell. These processes can lead to red, pink, yellow, brown, white or grey/green discolouration and may or may not be associated with a foamy appearance and pungent smell.

Is that raw sewage/effluent in the lagoon or ocean?

Dirty or pungent water does not indicate raw or treated sewage. There are many possible reasons water may look and smell bad, including natural process. Rotting vegetation, seaweed and algae blooms can smell bad and lead to discoloured water, such as red, pink, yellow, brown, white or grey/green. Rotting seaweed and algae blooms may also look like dirty water or a foam or oil slick on the surface. Council does not recommend swimming in or near an algae bloom.

It's brown water, is it sewage?

If it looks like sewage and smells like sewage - it is not necessarily sewage.

People often mistake brown and smelly ocean water as sewage and often the reported sewage is an algae bloom. People should report both algae blooms and possible sewage to Council immediately so they can be investigated. Council does not recommend swimming in or near an algae bloom.

How does the stormwater at Terrigal compare to guidelines for water quality?

Australian water quality guidelines for receiving waters (rivers, lakes, lagoons) **cannot** be used to assess stormwater.

There are no universal guidelines for stormwater water quality, however there are processes for determining a guideline for stormwater quality that protects local environments.

Central Coast Council is in open discussions with the NSW Government about developing guidelines for stormwater for the Terrigal area. This process requires site specific research and will take time to develop.

When developed, the stormwater guidelines will take into account the values being protected, dilution, natural resilience and sensitivity of receiving environments.

Specific guidelines need to be developed based on catchment conditions and the required level of service from the water.

Central Coast Council does not recommend that people have direct contact with stormwater.

Is ammonia a direct indicator of sewage input?

Ammonia is one possible indicator of sewage input however, ammonia is naturally occurring and may also be present in stormwater in response to a range of natural and catchment landuse factors including decomposing organic material, pet waste, wildlife waste, fertilisers and atmospheric ammonia.

To detect sewage input, ammonia testing needs to be paired with bacteria testing and more direct and reliable tests such as trace pharmaceuticals e.g. testing for painkillers, anti-inflammatories and caffeine.

Sample collection and analysis needs to be conducted under quality controlled conditions. For all of Council's monitoring programs, samples are collected by professional scientists and analysis is undertaken by accredited laboratories. This ensures the accuracy of the information. Test kits available to the community such as pool tests are not accurate for the purposes of testing stormwater or environmental waters.

What are the primary causes of blockage or overflows in our sewerage system?

Tree roots and the flushing of inappropriate items are the main causes of partial and total blockages in our sewer system.

What role does Council play in maintaining our sewerage network?

Council manages more than 320 sewerage pumping stations and eight sewage treatment plants which treat over 80 million litres of sewage on the Central Coast every day.

Over the next four years we are rolling out significant upgrade and expansion works across our sewerage network including an \$11million region-wide project to renew targeted gravity sewer infrastructure.

Like all infrastructure, sewer pipelines will intermittently require repair and we are also using an innovative technique to rehabilitate damaged sewer pipelines. We are inserting liners into the existing pipe to reinforce it and seal any leaks which reduces the risk of future damage, reduces repair costs and can help eliminate the need to excavate, minimising disruption on the community.

How can you help 'Save Our Sewers'?

By us all being water and sewer aware, and actively participating to 'Save Our Sewers', we will continue to make the Central Coast even better.

Only ever flush the three Ps down your porcelain throne – Poo, Pee and Paper – Everything else needs to go in the appropriate bin.

Flushing things down drains and toilets like cooking waste including food scraps, fats and oils, cigarette butts, nappies, dental floss, sanitary items, cotton buds, stickers on fruit, and wipes – even if they are labelled 'flushable' can cause significant damage.

Also you can help 'Save Our Sewers' by remembering to 'Dial before you Dig' – a free national referral service which can be accessed online to assist in preventing damage and disruption to our vast infrastructure networks.

What should you do if you suspect a sewerage block or overflow in your area?

When alleged blockages and overflows are reported, our primary concern is the health and safety of the public and the environment. We have crews on standby 24 hours a day, 365 days a year so please **call Council immediately – day or night – on 1300 463 954** if you experience water or sewerage concerns.