



Terrigal Catchment Audit

Summary Report - 2

February 2020

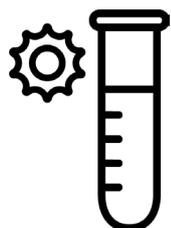


Summary of Terrigal and Coastal Lagoon Audit - Report 2

The Terrigal and Coastal Lagoons Audit is a comprehensive water quality monitoring project being undertaken in partnership between Central Coast Council and the NSW Government's Department of Planning, Industry and Environment (NSW Government). The Terrigal Catchment Audit is a subset of this broader

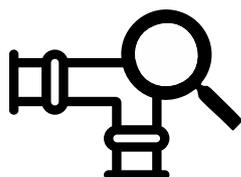
project, which aims to investigate the cause and extent of microbial contamination at Terrigal Beach and Terrigal Haven, and address the pollution risks to swim safety through a range of strategies. This summary report provides an update to the community on the audit program progress and key outcomes.

Outcomes at a glance



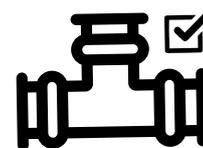
94%

dry weather samples "Good" for swimming Terrigal beach and Haven



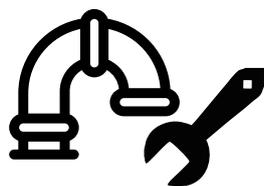
15.7km

sewer pipes inspected so far



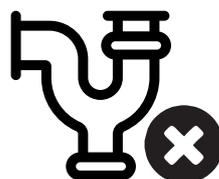
1.15km

sewer pipes relined



3.61km

sewer pipes to be upgraded



10

illegal connections identified



2.3 km

stormwater inspected

Water quality at a glance

This fact sheet provides a summary of the second report of the Terrigal and Coastal Lagoon's Audit, released in February 2020.

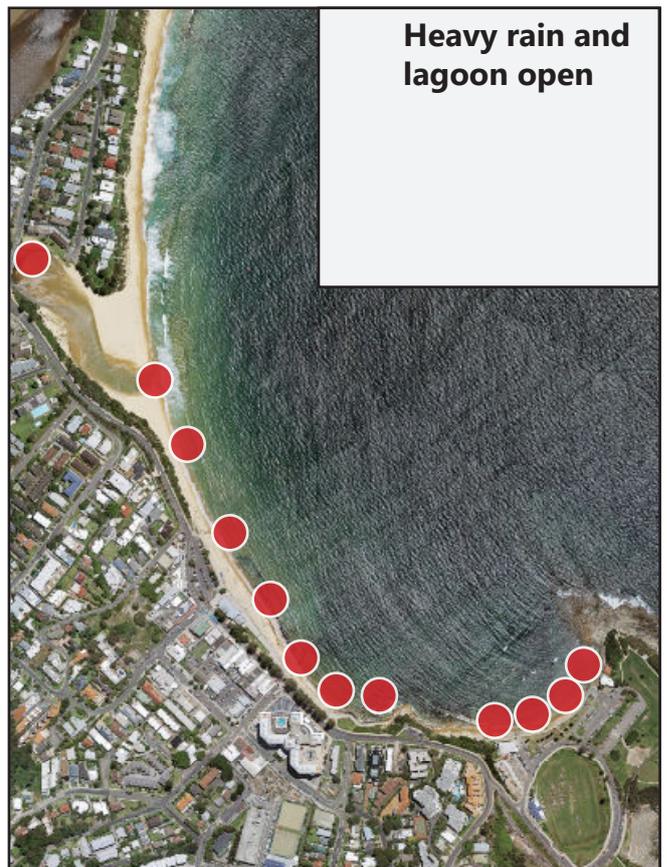
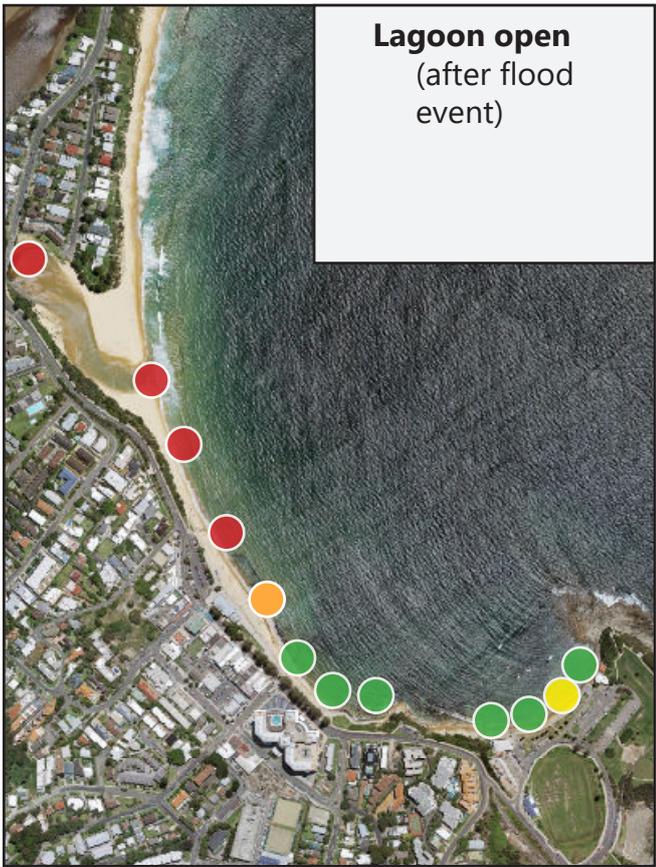
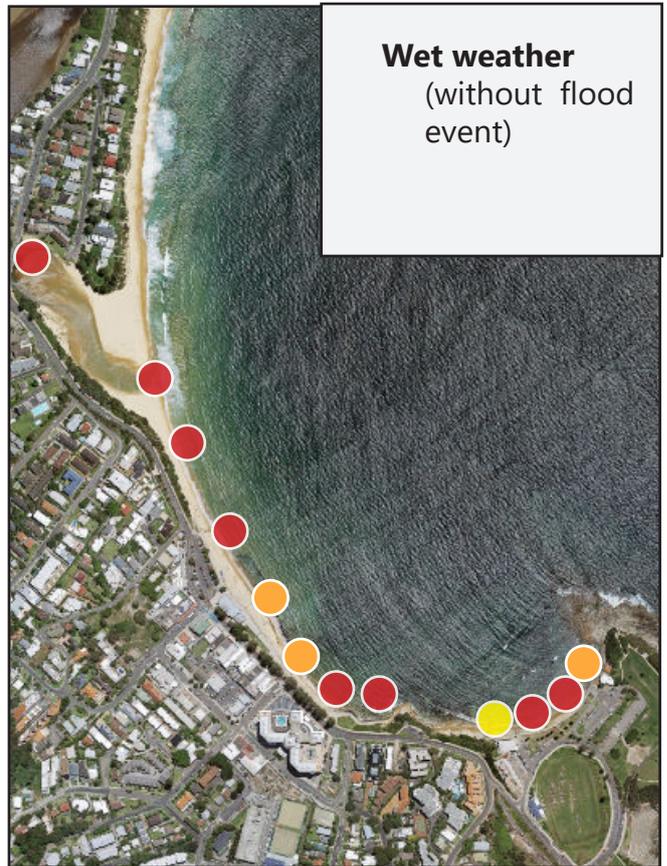
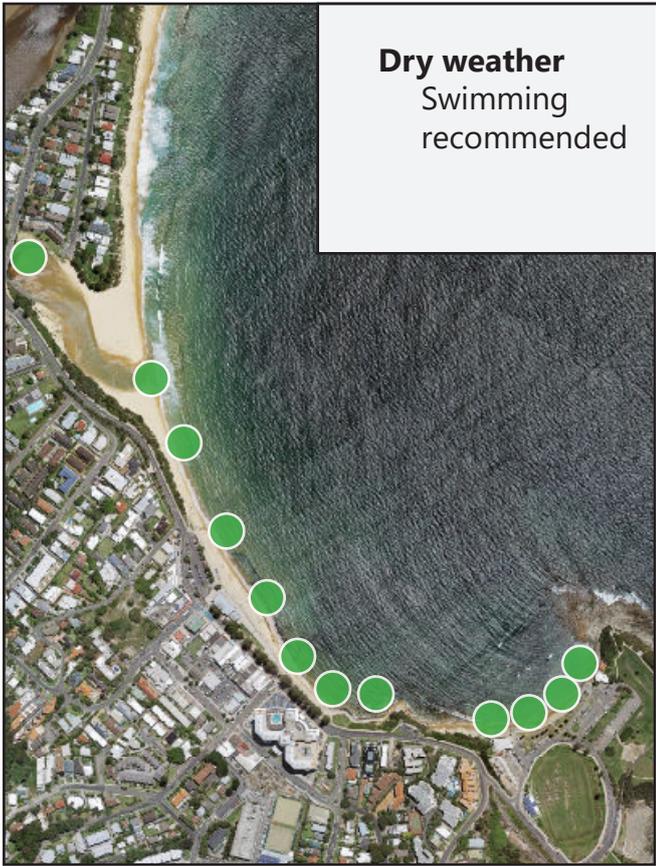
At a glance, water quality between 1 January and 31 October 2019 was considered "Good" for swimming 94 percent of the time during dry weather for the Terrigal area as a whole.

If Terrigal Beach is assessed separately from Terrigal Haven, the beach was considered "Good" for swimming 96 percent of the time and Terrigal Haven was rated as "Good" for swimming 89 percent of the time during dry weather.

During wet weather, which is defined as ≥ 5 mm of rainfall within the preceding three days, Terrigal, as a whole was, considered "Good" for swimming 52 percent of the time.

Council recommends that people do not swim within three days of rainfall at Terrigal Lagoon, Terrigal Beach or Terrigal Haven.

These outcomes are based on 56 sampling days, across 12 sites between January and October 2019. Council is committed to continuing investigation work within Terrigal.



Colour code

- **Good**
- **Fair**
- **Poor**
- **Bad**

The audit process

Microbial contamination at beaches, estuaries and lagoons is common in urban areas. The source of contamination can vary, and high or persistent contamination from human sources can affect swim safety.

Contamination may be caused by a range of things, including:

- old or damaged sewer pipes that leak - these can be either private or public assets
- infiltration of groundwater into sewer pipes
- blockages caused by materials incorrectly flushed (sanitary items, wet wipes, tissues, paper towel and rubbish) as well as other factors such as tree root intrusion and sediment or debris
- sewer network and private septic system overflows caused by:
 - o illegal connections from private buildings with stormwater connected to sewer
 - o blackouts affecting private and Council pump stations.

The sources of contamination can vary from catchment to catchment. We apply a range of different investigation and treatment techniques to address the cause.

In this audit program, the following three phase approach has been developed to determine contamination sources and improve water quality:

- **Phase 1:** Initial investigation to understand the process of contamination, and its influence on swim safety.
- **Phase 2:** Major catchment investigation to narrow down contamination hotspots, prioritise funding, and find problems in public and private infrastructure.
- **Phase 3:** Infrastructure improvement works and long-term water quality monitoring to assess if water quality improves.

Where is the audit up to?

Terrigal and Terrigal Lagoon audit - expected timeframes

Location	Last FY 2018-19	This FY 2019-20	Next FY 2020-21	2021-22 FY	2022-23 FY	2023-24 FY
Terrigal Beach and Haven	P1	P1, 2 and 3	P2 and 3	Monitoring**		
Terrigal Lagoon	P1*	P1, 2 and 3	P2 and 3	P2 and 3	P3	Monitoring**

* Lagoon catchments are considerably larger than the Terrigal Beach and Haven catchment and will take longer to complete.

** Further monitoring periods may provide recommendation to revisit phase 2 and 3 depending on water quality results.



In Terrigal Beach and Haven Phase 1 is complete and the audit has progressed to phases 2 and 3. In the Terrigal Lagoon catchment Phase 1, 2 and 3 are underway and will take longer to complete as the lagoon has a larger and more complex catchment.

Currently Phase 2 investigations include catchment stormwater sampling, CCTV camera inspections throughout the sewer network, dye testing, inspecting sewer manholes, and smoke testing for illegal connections.

Phase 3 works underway include relining pipes, resealing and raising manholes, undertaking pipe dig and replace works, and working with the community to rectify illegal stormwater to sewer connections.

We have also assessed:

- 100 percent of Council's high risk sewer network and stormwater drains using CCTV technology in Terrigal Haven
- 60 percent of Council's high risk sewer network and 75 percent of Council's stormwater drains using CCTV technology in the Terrigal basin.

Assessment of Council's high risk sewer network and a manhole 'reveal and seal' program is also underway in three sub-catchments of the Terrigal Lagoon area. Smoke testing in one sub-catchment of Terrigal Lagoon is complete.

What have we learnt so far?

Phase 1 investigations in Terrigal Beach and Haven are now complete and have established that a key contamination source is of human origin. This phase also undertook comprehensive water sampling at ocean swim sites and adjacent stormwater pipe outlets, undertook sediment sampling, and identified high risk infrastructure.

As of the 1 November 2019:

- 94 percent of dry weather samples "Good" for swimming at Terrigal Beach and Haven
- 15.7 km of sewer pipe inspections have been undertaken
- 3.61 km of sewer pipes were identified as needing upgrades, of which 1.15 km have been relined
- two sub-catchment investigations are complete with smoke testings which showed a total of 10 properties with illegal connections from stormwater to sewer. Four properties have been rectified and six properties are pending final inspection
- through the Terrigal CBD, 2.3 km of stormwater pipe has been inspected.

Talking to our community

Council and the NSW Government launched a community-wide engagement program in

December 2019. The Your Voice Our Coast webpage yourvoiceourcoast.com/tcla allows Council and the NSW Government to share information with the community and seek local knowledge on potential contamination sources and other environmental conditions. Over summer, Council and the NSW Government hosted six 'pop-up' information stalls and four drop-ins to answer specific community questions.

The community engagement project allowed Council and the NSW Government to collect community data on local concerns using an interactive map that also allows interested community members to see the outcomes of the audit as they progress. The map can be accessed from the Your Voice Our Coast page.

Investing in our community

From January 2019 to December 2019, Central Coast Council invested \$440,000 in the audit program to undertake investigations and improvement works. Council will continue to invest in the audit program. The NSW Government's \$500,000 commitment for 2019-20 is funding the Department of Planning, Industry and Environment's technical investigations in the broader Terrigal and Coastal Lagoons Audit.

These investments collectively deliver high quality information on catchment water quality, sediment characteristics and hydrodynamic processes, allowing us to prioritise on-ground actions, complete comprehensive inspections of public and private infrastructure, undertake ongoing repairs and upgrades as well as keep our community informed.

Together Council and the NSW Government are addressing these issues and will report back to the community as a part of the major audit. The process is complex, and will take time to work through to ensure we fully understand the drivers of water quality, and are able to target future investment wisely.

What you can do?

It is the cumulation effect of our daily activities that has the greatest effect on water quality. The pollution from each household or business may seem insignificant, but multiplied by thousands of households and businesses, the concentration of pollution reaching our waterways quickly magnifies.

To help, you can:

- pick up your litter
- check your plumbing - do you know where your stormwater goes?
- only ever flush the 'three P's' down the toilet- poo, pee and paper! Everything else must go in the appropriate bin
- call Council on **1300 463 954** (24hrs/7days) if you have a water or sewage concern
- visit yourvoiceourcoast.com/tcla to view our project updates, interactive map and read the frequently asked questions.



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