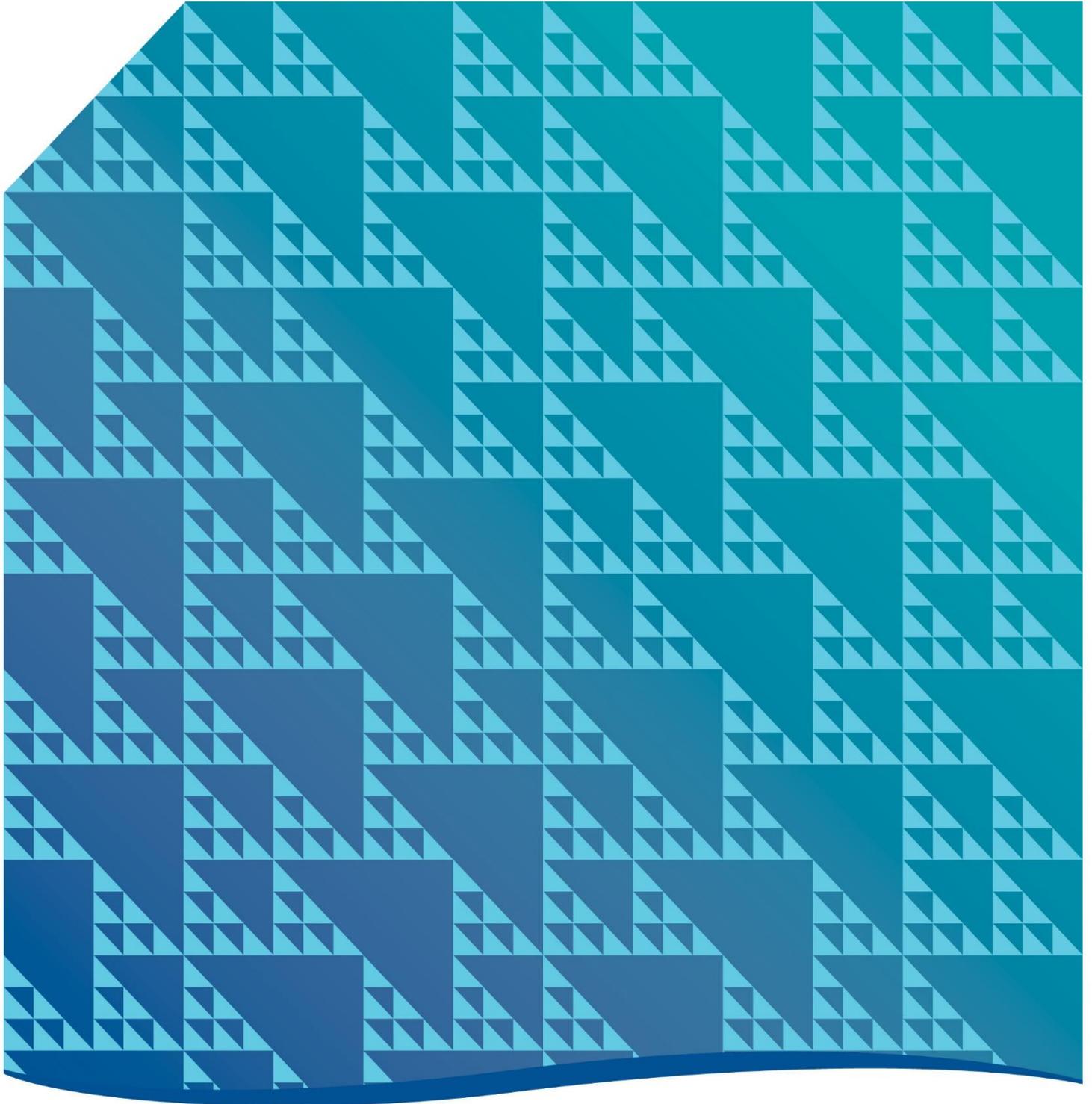


# Tamar Facts

## Tamar Estuary Management Taskforce





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# Who is the taskforce and what is our role?

The Tamar Estuary Management Taskforce is established under the Launceston City Deal and includes the following membership:

- Allan Garcia, CEO Infrastructure Tasmania (Chair)
- Shane Eberhardt, Launceston City Council
- Councillor Leisa Gordon, Northern Midlands Council
- Mayor Bridget Archer, George Town Council
- Mayor Christina Holmdahl, West Tamar Council
- Mayor Craig Perkins, Meander Valley Council
- Andrew Fullard, General Manager, Launceston Flood Authority
- Rosanna Coombes, CEO NRM North
- Rolph Vos, Chair of Tamar Estuary and Esk Rivers
- Martin Read (Department of Primary Industries, Parks, Water and Environment)

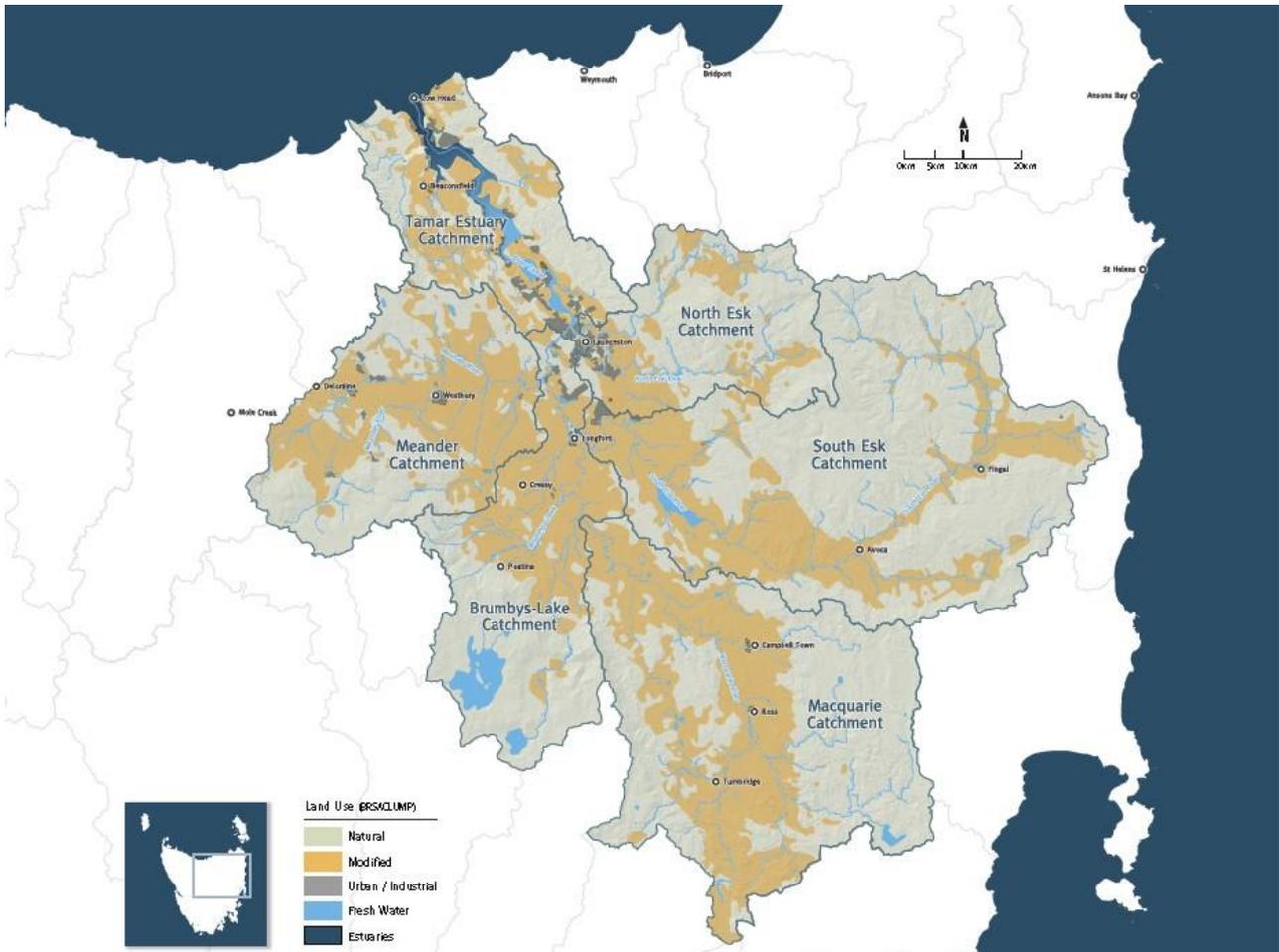
## The Taskforce will develop a River Health Action Plan to improve water quality by the end of 2017. The Plan will:

- Recommend priority government investments and policy actions
- Include preferred options for mitigating the effect on the Tamar Estuary of the combined sewerage and stormwater system on the Tamar Estuary
- Enable long-term oversight of the health of the Tamar Estuary and its catchments
- Identify measurable targets and accountability for meeting them over the life of the City Deal and the longer term
- Build on the work of the Tamar Estuary and Esk Rivers (TEER) Partnership led by NRM North, including the 2015 Water Quality Improvement Plan
- Deliver annual reports to the Launceston City Deal Executive Board on progress towards targets. The

Taskforce has \$2 million available for priority actions to reduce pollution from urban and rural land uses and address pollution from the combined sewerage and stormwater system. It will also be seeking to understand what avenues there are for funding and financing major capital improvements to the combined sewerage and stormwater system.

# Some facts

## The catchment



At 70km long, the Tamar is the longest Estuary in Australia. The catchment that feeds the Tamar Estuary is 10,000km<sup>2</sup> in area.

The Estuary encompasses a number of activities and industries including grazing, dairying, forestry, mining, residential and industrial uses.

The Tamar Estuary catchment, pictured above, covers a large area of Tasmania and events as far away as Tunbridge, Fingal and Deloraine can impact on the health of the River at Launceston or George Town.

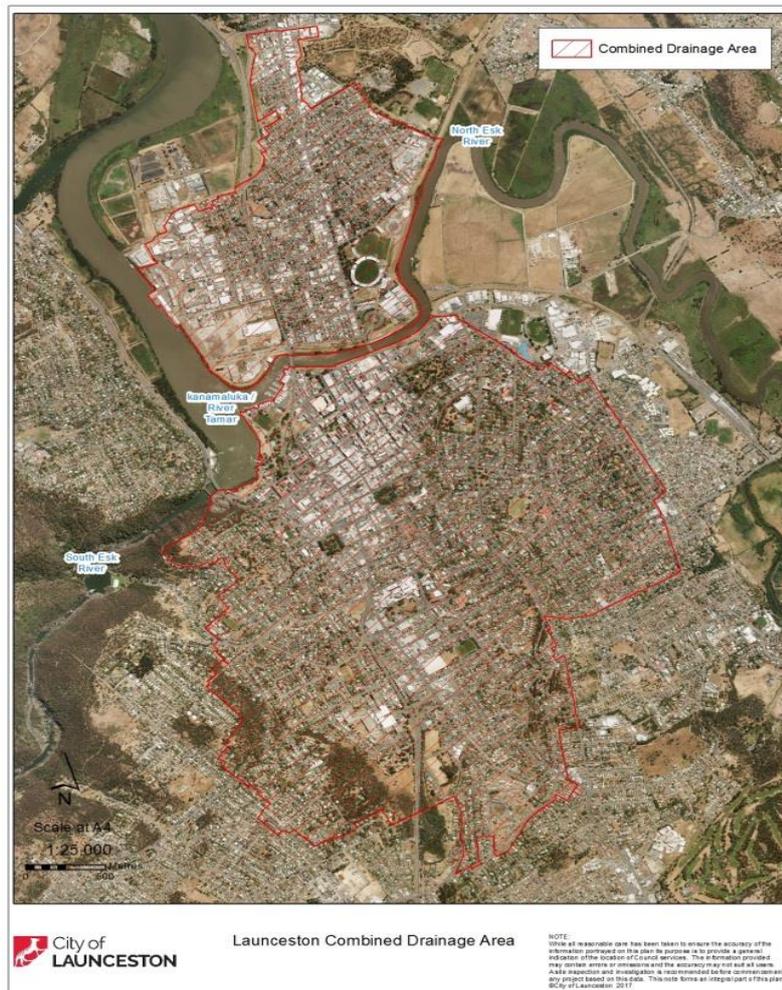
Influences including the combined sewerage and stormwater system, the inability to flush sediment, tides, agricultural practices in areas of the catchment, historical industrial practices, outflows from multiple waste water treatment plants throughout the catchments, river floods as well as man made changes to the flow and channel of the estuary have all been cited as reasons for the health problems of the Tamar.

## Sewerage system, combined sewerage and stormwater system, separated stormwater

Greater Launceston has six sewerage treatment plants which receive sewage from household and commercial settings and, following treatment, dispose into the Estuary. However, Launceston's main treatment plant, Ti Tree Bend receives sewage and stormwater from a combined system of sewerage and stormwater pipes. The combined system is bounded in red below.

To ensure a combined system functions like a stand-alone sewerage system, their networks would need to be designed to meet peak rainfall loads to ensure they could 'treat' all the water they receive. However, Ti Tree Bend system is not designed in this way. Launceston's combined system was designed to have a number of points at which it overflows stormwater mixed with untreated sewerage in high rainfall events.

While Launceston's combined sewerage and stormwater system may be unique in Tasmania, many of the major cities in Europe, the USA and Asia have combined systems. It should also be noted that while the combined system is considerable, there is much of the city which operates on a separated system. Unfortunately, the combined system is in the oldest and most built up areas of the City, which does constrain how easily, if the funds were available, it could be separated.



## What you might not know

To give an idea of the magnitude of the impact between low river flow and high river flow in the catchment, sediment is washed from the North Esk River at a rate of around 150kgs per day in low flows, but in high flow events can occur at rates of 150 tonnes per day.

While everyone is aware of the tidal nature of the Estuary and lower reaches of the North Esk and South Esk Rivers, you might not be aware that when flows are washed into the rivers from the catchment, it can take up to a week before that same water is flushed out of the mouth of the Tamar. This is not uncommon, the Thames River in London requires around 9 tides before entering flows exit and this feature has an important impact on clearing pollutants as they get locked in the system.

Therefore, it is not just what happens around Launceston that is important. The decisions of land users hundreds of kilometres away matter and the ability to act on these is similarly impacted by the receiving environment of the Tamar Estuary.

## Historical Practices



### BEACH AT ROYAL PARK.

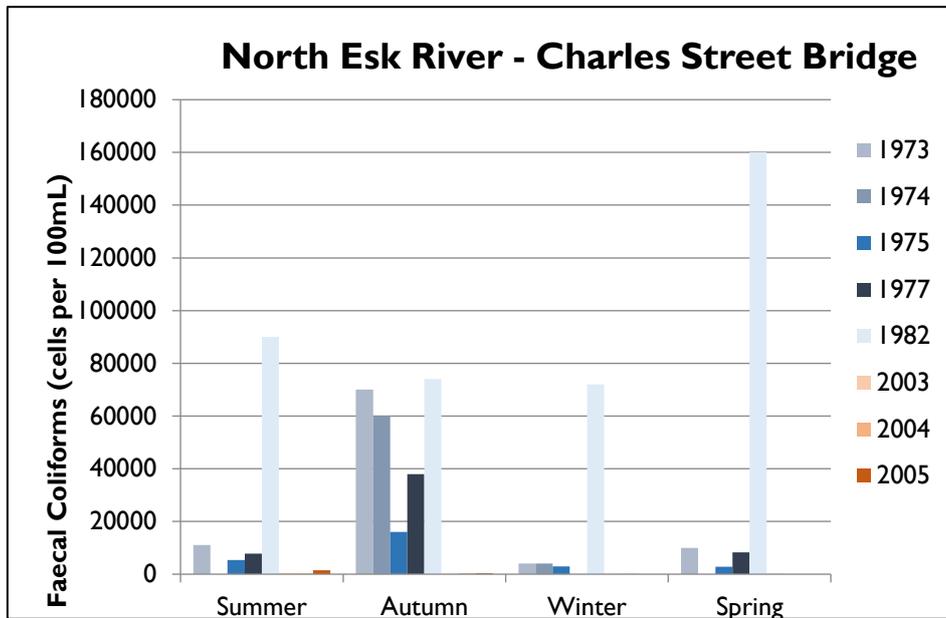
Another attempt is to be made to make a beach for the benefit of children at Royal Park. Some years ago a large quantity of sand was carted on to the foreshore, but it washed away again for the reason that no provision was made with a view to keeping it there. On that occasion the council received an account for £40 from the Marine Board for the sand, which was brought up from George Town in a barge. However, then a special trip had to be made, whereas now the Wybia is very often down the river, and it is possible that the cost will not be so heavy. At the meeting of the City Council last night Alderman Monds suggested that a barge load of sand should be obtained. The matter was left in the hands of the Mayor to arrange. During a discussion it was stated that steps should be taken to put in a couple of groins to prevent the sand being washed away. This matter also will be gone into.

Many older residents of the City will remember a beach at Royal Park. While the recreational value of such an attraction may have been large, the reality is the sand had to be transported from George Town and the beach was located adjacent to one of the major outfalls of the combined system.

Practices we would now acknowledge as outdated were part of common life in Launceston until recent times. For example, it wasn't until the early 1990s that the abattoir at Killafaddy was required to dispose of its waste into the sewer rather than directly into the North Esk River. These historical practices have a legacy today.

However, in many respects, the health of the Tamar and its river systems has come a long way compared to measurements taken back in the 1970s and 1980s. While not directly comparable to the measures of faecal bacteria today, the chart below shows the levels recorded at the Charles Street Bridge on the North Esk for selected years.

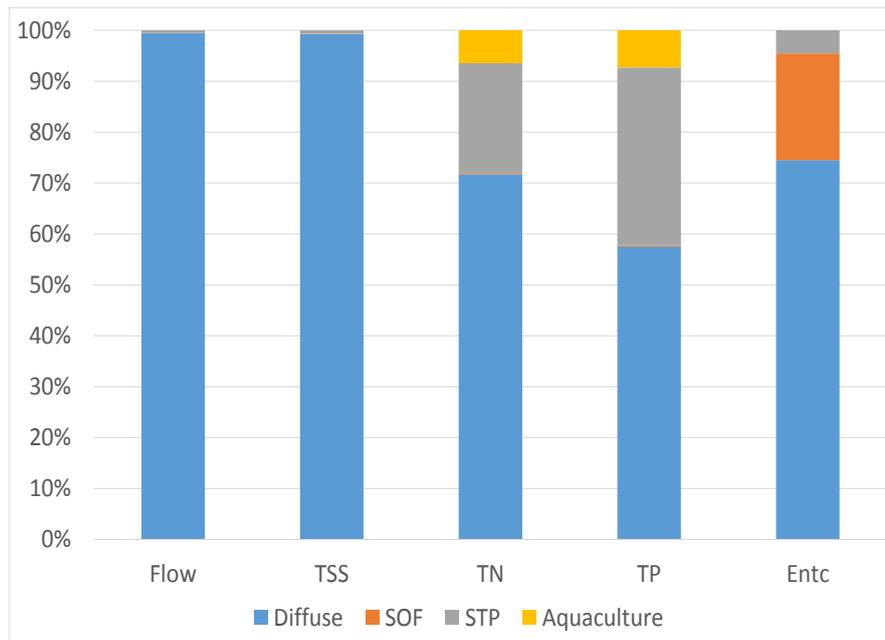
As can be seen, readings from 10 years ago are barely visible when compared to the scale of faecal pollution in the 1970s and 1980s.



# The science

## Pollutants in the catchment and the River

Most of the flow into the Tamar comes from 'diffuse' runoff from the catchment. Diffuse sources of pollutants are carried with these flows and include the run off from green spaces, those used for agriculture, urban and residential land uses. Water from sewerage treatment plants and combined system overflows are minimal in comparison.



Total Suspended Solids (TSS), which includes sediment, also flow largely from the diffuse sources.

Nutrients like nitrogen, measured as Total Nitrogen (TN) and phosphorous, measured as Total Phosphorous (TP), are largely from the use of fertilisers in the catchment areas and from sewerage treatment plants along the river. High levels of nutrients impact on water quality by causing issues like algal growth, which stop sea grasses from getting the light they require. When seagrass dies and begins to decay, it consumes the dissolved oxygen in a river, which in turn can kill animal life.

Faecal bacteria contamination in the water, which is measured using Enterococci (Entc) levels, is caused largely through livestock and animal wastes being washed into the catchment, while sewerage overflows in the combined system are also an important contributor. These bacteria are the ones which can have the greatest public health impacts on users of the River.

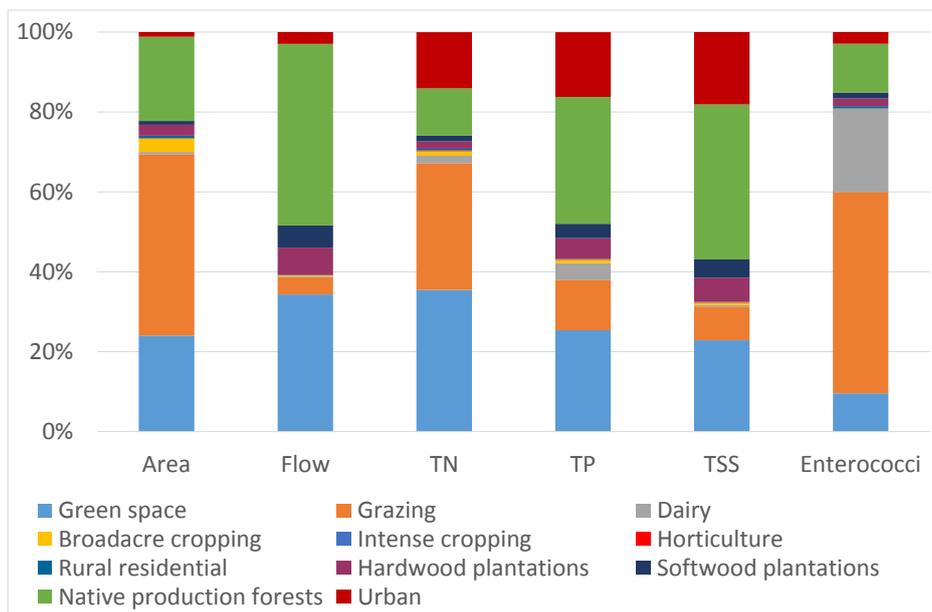
## Diffuse sources

As can be seen in the chart below, of the contributions of diffuse sources to pollutant loads in the catchment, dairying covers a tiny proportion of land area, but is an important contributor of faecal bacteria.

Similarly, our urban areas only occupy a small proportion of the catchment but are an important contributor of nutrients and sediments in the system.

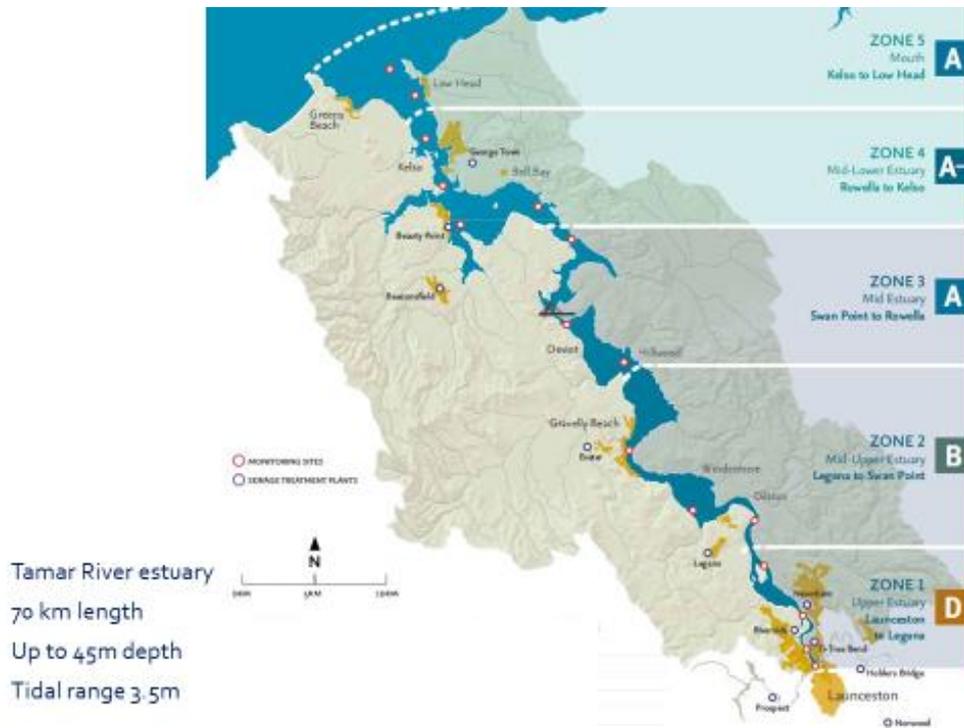
Conversely, grazing is a large component of land use, but also a large contributor to faecal bacteria and nitrogen loads.

Native production forests have a large flow associated with their land use type due to their high elevation and rainfall in the catchment, and this results in solids as soils being washed into the catchment following harvesting and regeneration practices after rainfall. It is also a significant contributor to nutrient levels.



## The Report Card

The Tamar Estuary and Esk Rivers Report Card for 2016 shows that Upper Estuary between Launceston and Legana is the area with the poorest ecosystem health. Given the findings of the report, the TEMT is now considering if the identified area should be the greatest area of focus.



## What are the community's expectations?

While the health of the Tamar Estuary is improving, the TEMT is interested to hear what reasonable expectations the northern Tasmanian community have for the use of the Estuary. Submissions are encouraged to provide their reasonable expectations on swimming and fishing in the Tamar as well as the overall health of the Estuary.

Community members are also encouraged to provide feedback on whether the focus should be on the broader practices in catchment areas, the combined system given its proximity to the problems around Launceston, and whether issues of public health are more important than the ecological health of the Tamar River.

The Taskforce would like to hear your views on the levels of service you desire, as well as your ideas on what the priority actions should be and ideally these views should be informed by a sound evidence base or precedent from elsewhere.

Submissions close Friday, 13 October 2017.

Please forward your submissions to [temt@stategrowth.tas.gov.au](mailto:temt@stategrowth.tas.gov.au)



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