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STORMWATER QUEENSLAND
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Scientists, innovation and the community - an urban coastal collaboration fit for a reef

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Biography:
Lynne attained her PhD in environmental microbiology at the University of Tasmania studying the unique and fragile lakes of the Vestfold Hills in Antarctica.

Lynne has significant environmental policy, legislation, monitoring and evaluation experience across Tasmania, Queensland and the Northern Territory.

Lynne has worked for Cairns Regional Council for the last ten years, where she is using her experience to oversee Council's water quality monitoring program and environmental quality systems associated with Councils water, wastewater and waste management activities.

In 2017, in addition to her existing role, Lynne was appointed Project Manager for the Smart Cities, Smart Catchments project where she leads a team of highly qualified individuals and relishes sharing her passion for waterways that support healthy aquatic life, strong communities and science education. Lynne sits on the Technical Working Group for the Wet Tropics Healthy Waterways Partnership and is a local education STEM mentor.

The Great Barrier Reef is the world's largest coral reef system stretching for over 2,300 kilometres (1,400 miles) – neighbouring 15 coastal councils and their urban communities.

Working with the community, educators and scientists the Smart Catchments program led by Cairns Regional Council is fulfilling a commitment to the 2050 Reef Plan by investigating how to monitor and manage water quality run-off from its urban catchments so as not to negatively impact the Great Barrier Reef lagoon. While Council is responsible for maintaining stormwater systems it is also through this program encouraging all community members to take responsibility for reducing the amount of rubbish and pollution that is carried into drains and out to sea.

Through an initial two-year pilot study, launched in 2017 and partly funded by the Australian Government's Smart Cities and Suburbs program, environmental sensors are communicating water quality data in real-time, allowing better stormwater management by Council.

The innovative sensor technology used for this study has had its challenges and while implementation was made more achievable due to the resources and experience available through Council, including capital works delivery and information technology, success would not have been possible without the James Cook University partnership and expertise in water quality monitoring.

A further example of the importance of the collaborative research approach is an ambition to link the sensors into Council's SCADA network so they are on the same operating system as other key council assets such as pump stations and treatment plants. This is technology available to councils that would not be generally available to State agencies or universities.

With the live data being freely available, community members are being encouraged to access and understand the outputs, by first engaging in an online, specifically designed and developed user-experience, which includes a 3D flythrough of the Saltwater Creek catchment.

While the Smart Catchments study has achieved many successful outputs including a calibrated stormwater quality model along with immediate alerts for significant changes in water quality, there are many 'unknowns' particularly in relation to community uptake of the data – launched to the public in June 2019 – and ongoing monitoring of data and consequential actions.

It is hoped future expansion of the methodology within the Cairns region and all regional councils neighbouring the Great Barrier Reef will be considered and if implemented have a real, immediate and long-term impact on the health of this natural wonder.