

# Moneys Creek Lagoon Water Quality Study

Moneys Creek Lagoon, located in the heart of Bargara and owned by Bargara Golf Club, has been showing signs of stress, with algal blooms and fish kills becoming more frequent. The lagoon is an important asset to the people of Bargara and its continuing poor health has led to the formation of the Moneys Creek Rehabilitation Group. On behalf of this group, Bargara Golf Club commissioned a hydrodynamic and water quality assessment with the aim to research and consult on options to revitalise the water quality while also promoting community enjoyment.

To investigate the water quality, the TUFOW – AD (advection-dispersion) software package was a critical component within an integrated modelling approach. The model was successfully executed and the results confirmed that elevated pollutant loads enter and accumulate within the lagoon, largely due to the restricted tidal flushing regime. Without adequate flushing the water quality diminishes and interferes with the natural hydrological and ecological processes.

As part of a holistic management system proposed for Moneys Creek, TUFLOW – AD, was used to investigate a series of flushing management options to improve the water quality, these consisted of:

- Increased Flushing at the Causeway;
- Implementation of a low lying central bund wall within the lagoon to assist circulation;
- Dredging to assist buffering inflows and temperature rises; and
- Pumping of seawater into the upper reaches of the lagoon.

The results of the management options investigated, established that an optimised positive circulation pattern significantly improved the water quality while also highlighting that the total volume of tidal waters used for flushing does not necessarily give an indication of how well the system is 'flushed'. Ultimately the preferred and long term management system for Moneys Creek Lagoon required both source and optimised flushing controls to establish a healthy lagoon.

**Client**

Bargara Golf Club

**Date**

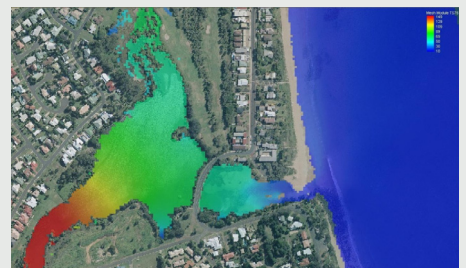
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**Services & Expertise Provided**

Catchment and Pollutant Washoff Modelling;

Receiving Water Quality Modelling; and

Flood Modelling.



TSS in Moneys Creek Lagoon during a storm event