



PORT PROFILES

our
environment

water quality



PORT of
TOWNSVILLE

Nexus North Queensland



Water supports a multitude of functioning coastal ecosystems and facilitates the distribution, abundance, and functions of organisms. Coastal water quality is very important environmentally, economically, and socially.

Coastal water quality is influenced by the surrounding land use including the amount and type of agricultural/industrial use and urbanisation. Other factors that influence water quality can be natural, for example: catchment run off, flood events, storm and cyclonic events; or anthropogenic, for example: stream modification, land clearing, urban storm water runoff, agriculture, sewage treatment plants and industrial runoff. These factors may reduce water quality by supplying increased sediments, nutrients, trace metals, hydrocarbons and pesticides.

Trace metals and nutrients naturally occur in waters and sediments as a result of natural weathering and erosion and are essential for biological processes. However, human activities may increase the levels of these parameters entering the marine environment which could have subsequent effects on biological marine assemblages.

The Port of Townsville has adopted an integrated and co-operative approach in managing the activities at the Port to minimise any impacts on receiving waters as a result of Port operations. This includes product handling and transfer operations, stormwater runoff, vessel movements, marinas, and commercial and industrial developments.

A water quality program has been developed to assess the effects of Port operations on the quality of receiving waters in and around the Port of Townsville that may impact on ecological sensitive areas.



water quality program

The routine water quality monitoring program was implemented in 2004 to:

- monitor the quality of water within the Port of Townsville to provide a comparison with statutory guidelines and local reference data;
- increase the information available to management, allowing for improved environmental management initiatives to be adopted;
- assess the effectiveness of current and future environmental management strategies;
- obtain a substantial water quality reference data set to allow for the assessment of future developments at the Port against pre-development water quality characteristics;
- determine point and non-point sources of pollution which may be affecting the quality of water within the Port.

The long-term water quality monitoring program is designed to complement and expand existing monitoring programs. The program aims to gain information on the quality of receiving waters through a structured long-term water quality sampling program.

Surface water samples are collected at over 30 sites bi-annually (pre and post wet season), within Ross River, Ross Creek, the Inner Harbour, Outer Harbour, and the Sea Channel. The samples are collected, according to laboratory instructions, and analysed by an independent NATA accredited laboratory. The water is analysed for a suite of heavy metals, nutrients, suspended solids and petroleum hydrocarbons. The water quality results are then compared to regional, state, and national guidelines and examined for trends within and between the grouped sites and between sampling events and over time.

Currently there is a lack of long-term water quality data for the region; Townsville Port Authority supports efforts to develop regionally-appropriate guidelines that include consideration of the tropical and local environment. The Port also supports water quality research and initiatives such as Creek to Coral, the Cleveland Bay Consortium, Great Barrier Reef Marine Park Authority Reef Beat, and local postgraduate research undertaken through James Cook University.



related monitoring programs

The Port community routinely monitors storm water, waste water, and ground water within individual facilities and at discharge points throughout the Port. This information is combined with physical process modelling to develop a comprehensive understanding of the receiving environment.



our port and the environment

Townsville Port is Queensland's third largest commercial Port and is capable of handling a diverse range of cargo. Port operations must be undertaken in a manner that is sympathetic to the surrounding area, minimising potential impacts on the receiving environment to ensure sustainable operations and growth. The Port of Townsville is located in close proximity to the adjacent city and residential areas and is located within a sensitive natural environment which includes the Great Barrier Reef World Heritage Area. It is in close proximity to other important sensitive environments such as seagrass beds, RAMSAR wetlands, mangrove communities, and coral reef communities.

Townsville is a coastal city located in tropical North Queensland and is subject to two distinct seasons, the wet season from December to April where average rainfall is 955mm, and the dry season from May to November where average rainfall is 195mm. This seasonal rainfall contributes to the receiving water quality of the region. Environmental management is a high priority at the Port and all management initiatives are undertaken to ensure that the wider Port community is focussed towards the same environmental goals. Port operations are undertaken in a manner that is sympathetic to the surrounding area, minimising potential impacts on the receiving environment.



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