

# Water Quality

Water is our most valuable, natural resource, providing habitat for wildlife, water for households, factories and farms, and provide recreational and educational benefits for the whole community. Water quality provides essential ecosystem services that contribute to the lifestyles and livelihoods of the Ipswich community.

## Poor water quality poses threats to:

- Human health and well-being
- Waterway health and functions
- Reliability and quality of water supply
- Recreation and liveability values
- Agricultural use and livestock health
- Aquatic life
- Economic development, and
- Preservation of water resources for future generations.

## Impacts on water quality can be categorised into four broad areas:

- Point Source Pollution
- Urban Diffuse Source Pollution
- Non-urban Diffuse Source Pollution, and
- Peak Flows / Urban Stormwater run-off

The major threat to water quality is increased levels of sediment, nutrients, organic carbon, heavy metals, litter and other wastes from a wide range of sources. The number of potential contributors is very large, making urban diffuse pollution difficult to trace and manage, they include:

- Urban development sites
- Commercial and industrial sites
- Stormwater
- Roads

Non-urban diffuse pollution is the input of sediment and nutrient loads derived from gully and channel erosion. Grazing, clearing and loss of riparian vegetation is the most significant cause of non-urban diffuse source pollution on water quality in Ipswich. High sediment loads impact on water quality, aquatic flora and fauna, and channel morphology. Pollutants include sediments, nutrients, herbicides, and pesticides originating from:

- Rural landscapes
- Septic systems
- Rising water tables



Peak flows / urban stormwater run-off is a significant factor in the degradation of ecosystem health in urban waterways. Increases in the magnitude of stormwater discharges and the frequency of run-off events, due to introduction of impermeable areas and direct waterway discharge, can strongly influence water quality, and diversity of fauna and aquatic habitats in a waterway.

Effective management of stormwater discharge characteristics in urban areas involves challenging historical urban stormwater design (eg: moving all stormwater away as quickly as possible directly into urban waterways). Ipswich City Council is investigating alternative systems that can be implemented for new developments such as retrofitting existing areas to allow the retention, capture, control and reuse of stormwater at its source.

## WATER QUALITY MONITORING

Historically, water was considered to be an unlimited resource and its long term quality and availability were taken for granted. The combination of this belief with a quest for development led to the exploitation of our natural resources and a continual decline in the health of our waterways. Furthermore, the fauna and flora that relied on healthy creek and river systems for survival suffered greatly and their numbers have gradually declined.

Water Quality Monitoring allows us to collect regular data of water quality to assess the impacts of these activities on the overall health of the catchment. Areas of concern can then be investigated and action plans developed in order to minimise the problem.

Some common indicators of environmental health of the water include:

- temperature
- nitrogen
- fauna and flora surveys
- pH
- turbidity
- conductivity
- dissolved oxygen
- phosphorus

It is important to understand that we all live within a catchment area and that our day to day activities have the potential to impact on the health of our waterways. Water Quality Monitoring provides an avenue by which community groups and school students can assess the water quality of their local creek or river in order to understand the effects of human activity on the health of the catchment area. Monitoring also helps to evaluate the effectiveness of catchment management initiatives.