WATERWAY HEALTH

FACT SHEET

Nutrients and pollutants in Ipswich waterways

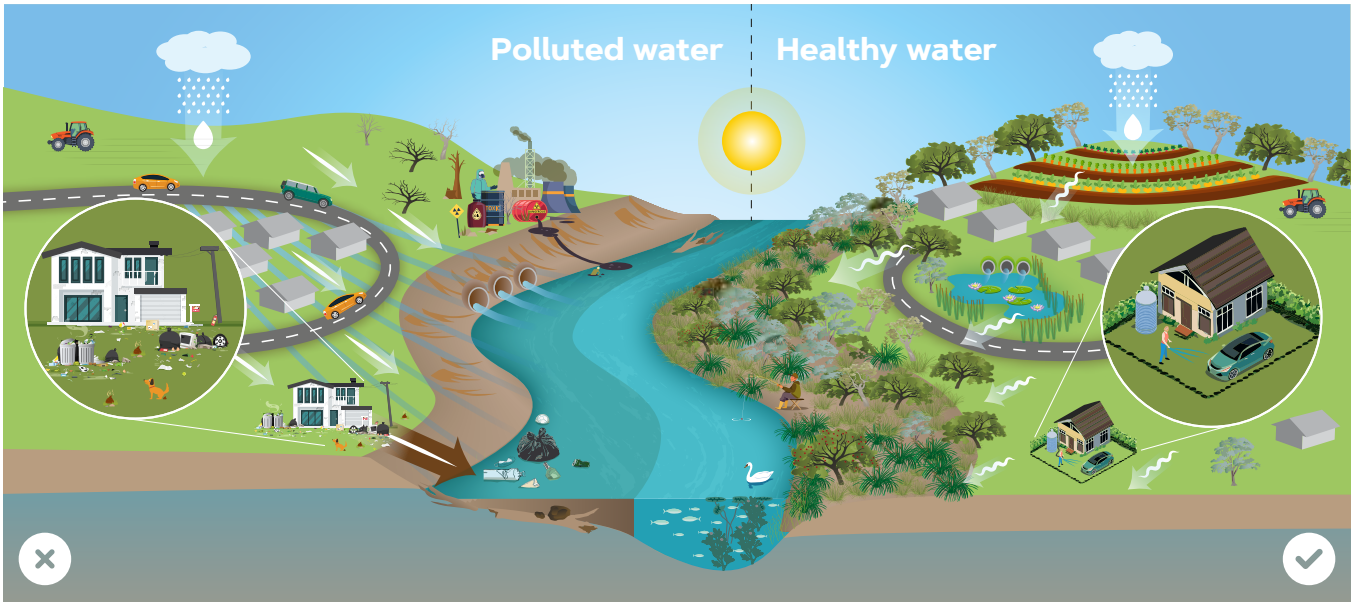
Anything that goes into a gutter or drain ends up in a creek. The pollutants in urban stormwater runoff are a significant factor in the degradation of ecosystem health in waterway.

A major threat to water quality is increased levels of pollutants such as sediment, nutrients, organic carbon, heavy metals, litter and other wastes from everyday human activities.

When these pollutants enter our waterways, they can have devastating impacts.

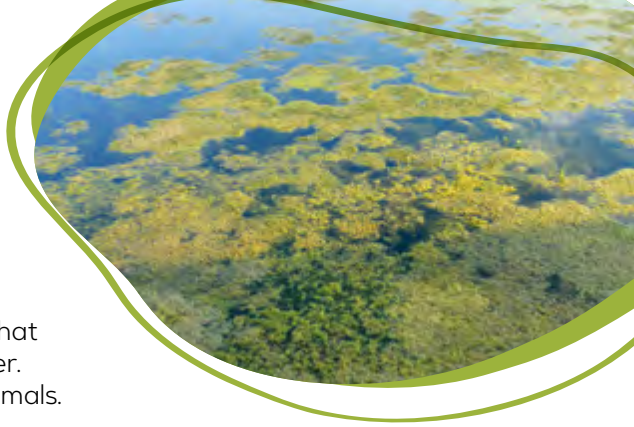
Nutrients and pollutants are caused by us - and we also have the power to reduce them.

NUTRIENTS AND POLLUTANTS IN ACTION



POLLUTED: Overuse of pesticides or herbicides in rural areas leads to runoff or spray drift entering waterways. Pollutants like litter, nutrients and sediment from urban and industrial areas are blown or washed into gutters and enter waterways through stormwater pipes that discharge into creeks and rivers. Household green waste, pet waste and general rubbish is discarded into creeks or left to wash into gutters after rain.

HEALTHY: Pesticide or herbicide use is minimised in both rural and urban areas. Wide buffers of native vegetation help filter nutrients and pollutants before they enter the waterway. Wetlands and other vegetated stormwater quality assets filter stormwater runoff, particularly from urban areas. Households minimise pollutants from going into gutters with actions such as washing cars on the grass.



KEY POLLUTANTS AND THEIR SOURCES

EXCESS NUTRIENTS:

Nitrogen and phosphorous are important nutrients for plant growth, but excessive amounts in waterways start a process called eutrophication. Algae feed on the nutrients causing algae blooms that smell bad, block sunlight and decrease the dissolved oxygen in water. This lack of oxygen can lead to the death of aquatic plants and animals.

COMMON SOURCES INCLUDE:

Chemical and manure fertilisers, soaps and detergents, leaking septic systems, greywater or sewage treatment plant discharges, lawn clippings and pet waste.

SUSPENDED SOLIDS:

These are fine particles of sediment and anything that floats or 'suspends' in the water such as clay and other organic particles. Suspended solids can absorb heat, deplete oxygen and reduce light penetration, making the water 'muddy' and decreasing the survival of aquatic plants and animals.

COMMON SOURCES INCLUDE:

Soil erosion, areas of disturbed earth (such as tilled fields or development sites), landscaping, high sediment industries such as cement works.

LITTER AND DUMPED ITEMS:

Illegal dumping and litter, both on land and directly into a waterway, causes pollution. Not only can this debris contaminate creeks and rivers, but it is also a threat to wildlife and aquatic habitats. It looks unpleasant, with floating rubbish or half-submerged dumped items affecting the appeal of a waterway.

COMMON SOURCES INCLUDE:

Items that should go in bins (such as cigarette butts, plastic bags, bottles and cans) and dumped items (such as household furniture, shopping trolleys, oil drums).

WATER QUALITY MONITORING

Water quality monitoring provides us with information on the health of waterways. It may be a single study to focus on a particular issue or project, or it may be ongoing to understand how water quality changes over time.

Council projects that aim to reduce nutrients and pollutants have water quality monitoring done before, during and after the project is delivered. This helps ensure both the delivery of effective waterway projects and the ongoing function of the devices and structures in the long-term.

Bob Titcombe Park bioretention system following construction

FILTERING NUTRIENTS AND POLLUTANTS

Urban stormwater quality improvement projects are implemented to help reduce nutrients and other pollutants before they enter waterways.

These projects can take many forms, such as returning concrete drains to a 'natural' state, re-engaging floodplains and constructing wetlands or bioretention systems.

There can be many additional benefits to these projects such as providing increased biodiversity, recreation, carbon capture, urban cooling, flood mitigation and more.

Bioretention systems temporarily hold and filter stormwater runoff before it enters creeks and waterways.

They are a natural way to treat and remove nutrients and pollutants using physical and biological processes. Features may include:

- gross pollutant traps over stormwater drains to collect rubbish before it enters the system
- a pre-treatment section to allow coarse sediment to drop out of the water
- a shallow, densely planted section to slow the water and trap pollutants
- a layer of specifically designed soil that filters nutrients and pollutants as the water passes through
- perforated drainage to collect the water before it flows to downstream waterways.

Certain native plants are well suited to breaking down pollution and maintaining the function of the system. These plants grow well in the sandy soils and tolerate dry and wet conditions.

- Tall sedge (*Carex appressa*)
- Club rush (*Ficinia nodosa*)
- Spiky headed mat rush (*Lomandra longifolia*)
- Hollow rush (*Juncus amibilis*).

- **Some ponding is normal.** These systems will hold water on the surface for a short time while it filters through. The system will have a high flow bypass channel that diverts any excess water.
- **Lots of plant growth is normal.** As natural, densely planted areas they may appear 'overgrown' compared to mown parks. Thick vegetation is important for the function of these systems.
- **You can use these same principles at home.** Creating a low-maintenance rain garden, in an area that can easily catch roof and house water runoff, will also filter nutrients and pollutants.

Bob Titcombe Park bioretention system following planting establishment

WHAT YOU DO MATTERS!

Reducing nutrients and pollutants will involve all of us working together. Pollution from residential, industrial and rural areas is the result of many actions at various locations within a catchment. The individual impacts may seem relatively minor, but when these impacts are added across the catchment they become a significant source of pollution entering waterways. The goal for everyone in the community is for clear and clean water to leave your property.

SEE IT, REPORT IT, STOP IT

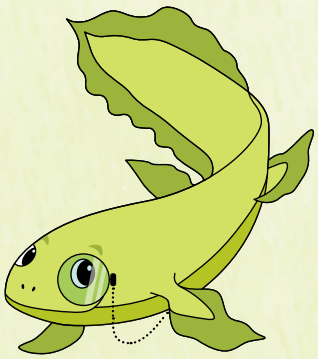
CONTACT: Ipswich City Council to report complaints about water pollution

PHONE: (07) 3810 6666

EMAIL: council@ipswich.qld.gov.au

WEB: Ipswich.qld.gov.au/live/issues-and-laws/nuisances-and-complaints/complaints

"Every drop entering our gutters should be clean and clear."



RESIDENTIAL

- Minimise fertiliser use in the garden, do not use when rain predicted
- Wash chemicals on the grass, such as car wash detergent, paint brushes
- Pick up pet waste, litter and cigarette butts and dispose of properly
- Compost or use a green waste bin for lawn clippings and garden cuttings
- Install a rain garden or use native plants to absorb stormwater.

RURAL / AGRICULTURAL

- Avoid excess fertiliser use
- Maintain or restore vegetation buffers, particularly along creek lines or hill slopes
- Keep septic tanks and greywater systems in good working order.

DEVELOPMENT / INDUSTRIAL

- Have spill prevention and clean-up plan and equipment on hand. Litter should be adequately stored and disposed of
- Lead by example with best practice onsite stormwater treatment, and employee education
- Avoid discharging directly into waterways, wastewater from building activities should be contained on site.