

# Monitoring recreational waterways in South East Queensland



South East Queensland has diverse and beautiful waterways that underpin our lifestyle and cultural identity. The quality of our recreational waterways is generally very good and suitable for recreational activities most of the time. Healthy Waterplay is a collaborative program to manage risks associated with water-based recreation in South East Queensland's waterways.



## Microbial water

All waterways are influenced by activities occurring within their catchments. Some of these activities can result in different types of pollution entering waterways. One pollution type which is of particular relevance to recreational waterway users is microbial pollution.

There is a strong link between rainfall events and the health of our waterways. With heavy rainfall, harmful microbes have an increased likelihood of being transported into our waterways from the catchment. Heavy rainfall also increases the risk of sewage entering waterways as a result of overflows from the sewerage network.

It is not possible to know the exact levels of microbial pollution in a given waterway at all times, and the results from waterway monitoring only indicate the levels of pollution present at the time the sample was taken. It takes a minimum of 24 hours to obtain results by which time the microbial pollution may no longer be present. It is important to use your best judgment to help you decide if it is safe to enter a waterway.

The information in this booklet can help you to make informed decisions about recreation in waterways and direct you where to find additional information.

### Recreation in waterways

South East Queensland offers an abundance of great recreational waterways for you to enjoy.

There are two types of recreation in our waterways:

- Primary contact recreation is any activity where the whole body or face is frequently immersed in water. Examples of primary contact recreation are swimming, diving, surfing, water skiing and whitewater canoeing.
- Secondary contact recreation is any activity where only the limbs are regularly wet, and swallowing water is unusual. Examples of secondary contact recreation are boating, fishing, rowing, kayaking, dragon boating and wading.

There is a strong link between rainfall events and the health of our waterways.



## Top tips to remember!

- 1 During and after heavy rain, avoid activities such as swimming, surfing, and jet skiing in open waterways and beaches for at least one day and for at least three days in rivers, lakes and estuaries.
- 2 Always avoid swimming in or near stormwater drains.
- 3 Look out for indicators of pollution before entering waterways including discoloured or strong smelling water, and floating litter, scum or debris.
- 4 Avoid contact with waterways if you have open cuts or infection
- 5 Look for posted warning signs and follow the advice on them.
- 6 Avoid getting water in your mouth or swallowing ingested water.
- 7 Do not enter or swim in floodwaters.

Always use your common sense and best judgment to decide if it is safe to enter a waterway



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# The impacts of microbial pollution

## Microbial pollution

A microbe is a tiny life form or microscopic organism that cannot be seen by the human eye. Microbial pollution is the presence of microbes in waterways at levels which can produce undesirable effects to human health such as illness. Most types of microbes occur naturally within our waterways and usually pose little risk to a healthy person. Risks to human health generally occur when disease-causing microbes (known as pathogens) are present in high numbers.

## Pathogens

Not all microbes can cause disease, but the ones that do are called pathogens. Bacteria, viruses and parasites are all types of pathogens. Pathogens can be present in recreational waterways and are usually associated with human and animal faeces.

## Symptoms of illness

Exposure to pathogens in waterways can occur through direct contact with polluted water during recreation, accidental ingestion of polluted water, or the inhalation of small water droplets.

Polluted water can cause a variety of gastrointestinal diseases, collectively known as gastroenteritis. Symptoms of gastroenteritis may include vomiting, diarrhoea, stomach-ache, nausea and headaches. Diseases and conditions affecting the eyes, ears, skin and the upper respiratory tract can also be contracted when certain pathogens come into contact with broken skin or the delicate membranes in the ear, nose, and lungs.

## Common illnesses associated with pathogens

PATHOGEN	COMMON ILLNESSES AND SYMPTOMS
Bacteria (e.g. Campylobacter, Escherichia coli)	Infections of cuts and wounds, gastroenteritis (including diarrhoea and abdominal pain)
Viruses (e.g. Rotaviruses, Hepatitis A)	Gastroenteritis, respiratory infections
Parasites (e.g. Cryptosporidium, Giardia)	Gastroenteritis (including diarrhoea, abdominal pain and dysentery)

Polluted water can cause a variety of gastrointestinal diseases.



## Frequently asked questions

### Who is most vulnerable to contracting illness?

Certain groups in the community may be more vulnerable to contracting illness and infection than others. Children under five years old, the elderly, people with compromised immune systems and people with open cuts and wounds are generally most at risk.

### What should I do if I come into contact with potentially polluted waterways?

If you come into contact with a potentially polluted waterway, it is advisable to wash with soap and clean water as soon as possible. Pay particular attention to any open cuts or sores by washing well with soap and water to prevent infection.



### What should I do if I become ill after contact with a polluted waterway?

If you experience symptoms such as vomiting, diarrhoea, stomach-ache or inflamed cuts after having contact with potentially polluted waterways, please visit your doctor for medical advice and contact the Queensland Health Helpline on 13 HEALTH (13 43 25 84).

### How do I report a pollution incident in waterways?

Please contact your local water utility to report a sewage spill or your local government to report other pollution incidents in recreational waterways. You can report littering and illegal dumping at: [report-littering-dumping.ehp.qld.gov.au](http://report-littering-dumping.ehp.qld.gov.au)





# Sources of microbial pollution in waterways

The major sources of microbial pollution in waterways come from:

## Stormwater

Stormwater is rain or water that runs off grass, roofs, roads and footpaths into the stormwater system. The stormwater system carries this water to the nearest creek, river or bay. Most stormwater is not treated and carries pollutants which can make our waterways unsafe for human contact. Stormwater can contain pollutants such as faeces containing pathogens (bacteria, viruses and parasites), litter, oil, pesticides, detergents, grass clippings and soil.

## Sewage discharge and sewage overflows

Sewage is wastewater from both domestic and industrial sources. This wastewater can come from toilets, showers, the kitchen sink or laundries and can contain faeces, urine and chemicals such as detergents. Sewage is normally transported via the sewerage system to a sewage treatment plant where it is fully treated, including disinfection to reduce microbial levels, before it is discharged into a waterway or reused.

Sewage overflows can be caused by heavy rainfall, mechanical faults at sewage treatment plants, or broken or blocked sewer mains. Sewage overflows can result in untreated sewage being discharged directly into waterways. The relevant water utility will inform the community when a hazardous sewage overflow occurs.

## On-site sewerage facilities

On-site sewerage facilities, such as septic systems, are independent sewage treatment systems that are not connected to a central sewage treatment system. They normally service only a single household. If on-site sewerage facilities are incorrectly constructed or poorly maintained they can act as a potential source of microbial pollution.



Sewage overflows can be caused by broken or blocked sewer mains.

## Boating discharges

Untreated sewage and greywater discharges from boats can create human health problems if discharged into recreational waterways. Greywater is wastewater generated from activities such as laundry, dishwashing and bathing. It is illegal to discharge sewage from a boat into a designated recreational waterway.

## Faeces from farm, domestic and wild animals

Faeces from farm animals (e.g. horses and cows), domestic animals (e.g. cats and dogs) and wild animals (e.g. birds and possums) can end up in waterways and pose a risk to human health. Faecal pollution from human sources represents a greater risk to human health compared to faecal pollution from animal sources. This is due to fewer types of diseases being transmitted from animals to humans. However, bacteria and parasites derived from animals can still have an adverse impact on human health.



## What you can do

There are a number of things you can do to help keep our waterways safe and clean for all to enjoy.

- Use designated toilet and waste facilities.
- Ensure young children have frequent toilet breaks.
- Dispose of human waste correctly when boating and do not discharge sewage, litter or other waste into recreational waterways.
- Avoid swimming if you have diarrhoea or vomiting.
- Clean up after your pets, ensuring faeces do not enter the stormwater system or waterways.
- Report sewage spills to your local water utility and report other pollution incidents to your local government.
- Maintain on-site sewerage facilities such as septic systems, contact your local government for advice.
- Ensure household stormwater is not connected to the sewerage system.
- Take litter home with you and pick up any litter, you see if safe to do so.



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## Be a responsible boat operator

Be a responsible boat operator and help keep our waterways clean by correctly managing onboard sewage.

There are several options for correct onboard sewage management such as using an onboard sewage treatment system.

For further information on sewage management options visit the Maritime Safety Queensland website at [www.msq.qld.gov.au](http://www.msq.qld.gov.au)

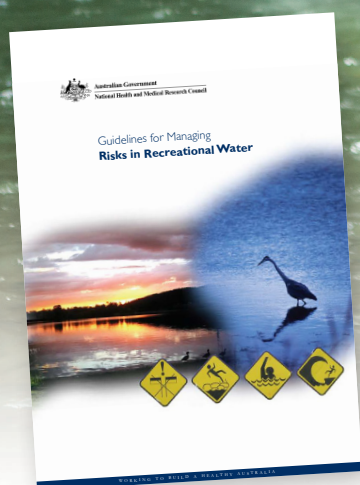


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Recreational water quality monitoring in South East Queensland is being undertaken in line with the National Guidelines.



## Recreational water quality

Monitoring recreational waterways for human health risks helps us to understand the quality and suitability of waterways for recreational use. Local governments can use monitoring data to inform the public of the suitability of waterways for recreational use. Human health risks associated with the recreational use of waterways are managed in accordance with the Public Health Act 2005.

### National Guidelines

In 2008, the National Health and Medical Research Council released the Guidelines for Managing Risks in Recreational Water (National Guidelines).

The National Guidelines were developed as a tool for local governments to ensure risks in recreational waterways are managed appropriately. The guidelines aim to protect human health by providing a framework to assess, manage and reduce the risks associated with recreational waterway use.

Recreational water quality monitoring in South East Queensland is being undertaken in line with the National Guidelines.

### What do we monitor?

Enterococci are monitored in South East Queensland to indicate the level of certain microbes in waterways that could pose a risk to human health.

The National Guidelines advocate using enterococci, (an indicator bacteria), as the preferred indicator for the detection of faecal contamination in waterways. Enterococci are present in high numbers in polluted waterways and can be detected using laboratory tests within 48 hours. When high levels of enterococci are detected, the public will be informed.

### What are enterococci?

Enterococci are bacteria found in the intestines of humans and warm-blooded animals. They are excreted in faeces and indicate if faecal pollution is present in a waterway. Enterococci do not generally cause illness but are associated with the presence of pathogens such as bacteria, viruses and parasites which do cause illness.





The Healthy Waterplay Program is a regional initiative in South East Queensland supported by local governments, water utilities, state government, universities and other relevant organisations. Healthy Waterplay supports regionally consistent monitoring, reporting and management of human health risks in recreational waterways.

This program aims to assess microbial water quality and provide information to the public about the potential health risks when using recreational waterways. This will enable people to make informed decisions about where and when to use waterways for recreation.

A number of local governments monitor popular recreational waterways at various locations throughout South East Queensland.

For information on recreational waterway sites near you, please contact your local government or check their website.



Healthy Waterways

Microbial water quality monitoring.



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For more information about the waterways of South East Queensland please visit the Healthy Land and Water website. There are other fact sheets and educational resources available.

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