



**WATERWAY
HEALTH**

**FACT
SHEET**

Erosion and sediment in Ipswich waterways



Erosion is the transport of soil from land into waterways, resulting from wind, rain and large river flows. Sediment pollution caused by erosion is one of the greatest threats to Ipswich waterway condition.

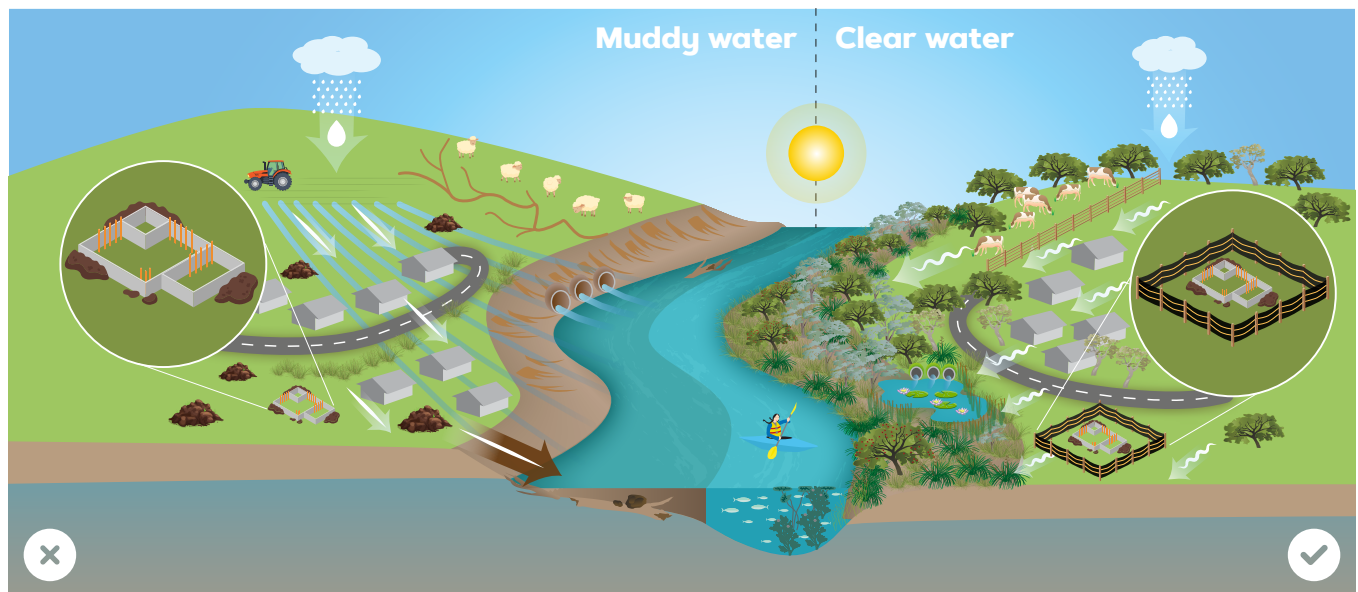
Erosion is a natural process, especially with Ipswich's fine dispersive soils and dry climate with heavy rainfall periods. Human activity in both urban and rural areas intensifies erosion and sediment generation, creating a severe problem.

Erosion occurs across Ipswich with the majority of sediment caused by unstable streambanks, vegetation clearing and exposed soils in construction areas, urban precincts and agricultural land.

Fortunately, erosion and the impacts of sediment are preventable forms of waterway degradation. We can improve waterway health with good construction and land management practices, well-considered government policies and awareness of how human activity impacts waterway health.



EROSION AND SEDIMENT IN ACTION



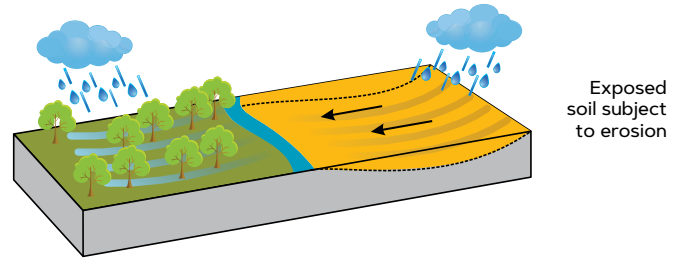
MUDDY WATER: Overgrazing and land clearing leads to bare earth and unprotected creeks. Sediment washes into waterways after rain or blows into waterways as dust. Urban development disturbs the land and turns natural creeks into straight concrete channels. These changes both remove the vegetation which can filter sediment and increases the volume and velocity of stormwater which makes the stream bed and banks unstable.

CLEAR WATER: Good plant cover across the catchment prevents soil exposure to wind and rain. Control measures are used effectively on disturbed land and in high sediment generating industries. Wetlands and vegetation help slow and filter stormwater runoff. Banks are given stability through wide corridors of native vegetation. Erosion and sediment occur in small increments and over long timeframes.

THREE MAIN TYPES OF EROSION IN THE IPSWICH REGION

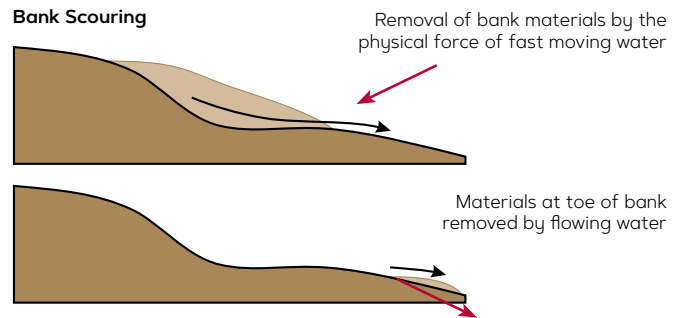
SURFACE EROSION

Exposed, uncovered soil is easily transported into waterways via stormwater runoff. Surface erosion often carries nutrient-rich topsoils into waterways, reducing fertility of the land and adding excessive nutrient loads to waterways often resulting in harmful algal blooms. This commonly occurs where soil has been exposed through agricultural land use or land development and construction sites.



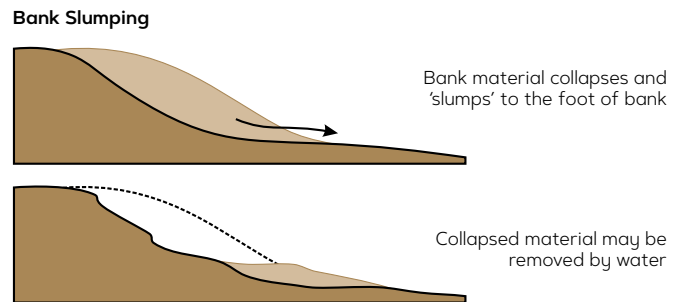
SCOURING EROSION

Scour erosion occurs where the lower bank meets the water. This type of erosion is common along the outside bends of waterways which are exposed to fast-moving water. Flowing water washes away the bank soil causing large sections of the bank to disappear into the river as sediment. This commonly occurs where there has been clearing of vegetation along the waterway. High-velocity urban stormwater runoff from concrete channels and pipes also contributes to scour erosion.



SLUMPING EROSION

Slumping erosion occurs when the top section of a bank is weakened causing large sections to collapse into a waterway. Slumping is often the result of steep streambanks not being able to support their own weight, after scouring has eroded the lower section of the bank. A lack of native vegetation along banks contributes to bank instability as root systems help hold together soil.

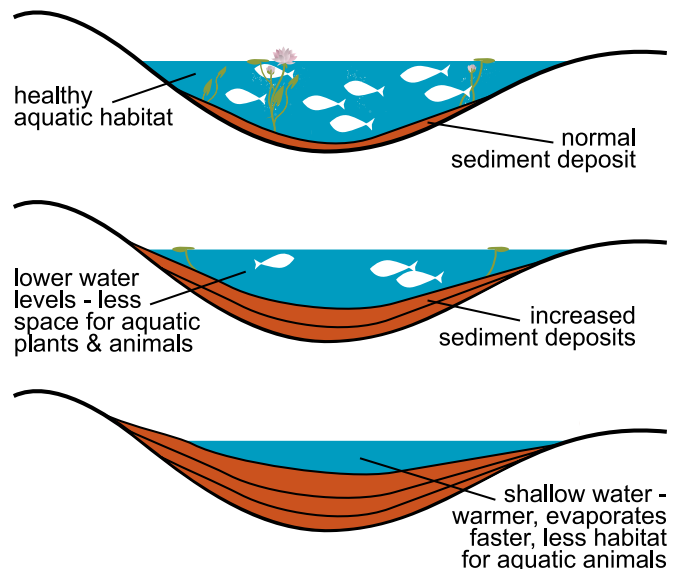


IMPACTS OF SEDIMENT

Have you wondered why the Bremer River is muddy brown? A major contributor is fine particles of clay and other sediment. These particles remain suspended in water and cause rivers to be muddy with brown, discoloured water. This can severely impact waterway health and the operation of water treatment plants for drinking water.

Suspended sediments typically carry high nutrient loads which can cause harmful algal blooms. Turbidity from suspended sediment also reduces the amount of light able to penetrate the water which impacts aquatic plant growth.

Settled sediment, typically larger particles such as sand and gravel, also has a negative impact. It can form piles of bed or bank material called a 'sand slug'. These impact creek and river flows and the depth needed to support aquatic life. These sediment loads can fill in critical deep pool habitat and destroy the natural pool-run-riffle form of waterways.





STABILISING WATERWAYS

The land that is next to, or directly influences a body of water, is known as riparian land.

Vegetation on riparian land, and other vegetation buffers on land, help to stabilise and filter sediment before it can enter a waterway.

Riparian vegetation holds bank soil in place. This stabilisation makes banks more resilient to erosion during flood and peak flow events.

There are different methods for rehabilitating degraded waterways and making banks more resilient to high-speed and high-volume flows. This includes:

- revegetation with native plants to form a dense and diverse riparian zone
- jute matting to help new plantings establish while protecting topsoil from erosion
- upright logs installed in the banks called pile fields, which slows flood water velocity.

HOLDING BANKS TOGETHER

LOWER BANK (TOE): Dense plantings of mat rushes and sedges with matted root systems and flexible branches help protect the bank from undercutting and scouring. Larger trees and shrubs, such as weeping bottlebrush, provide shade and habitat for aquatic organisms.

MID BANK: Planting with a diverse mix of fast-growing native grasses, mat rushes, shrubs and trees will bind bank soils and reduce the velocities of water as it flows over the bank.

UPPER BANK: Hardy trees and shrubs with deep root systems provide structure to the bank and bind soils. Planting in-between with ground covers and native grasses prevents soils being lost while filtering nutrients and pollutants from surface run-off before entering the waterway.

EFFECT ON SPECIES

Increased sediment loads entering our waterways impact on water quality and in-stream habitat condition for our unique aquatic life.

For instance, platypus require stable stream banks to burrow, and connected pools for foraging. The erosion of stream banks collapses burrows and reduces habitat options. Muddy water caused by increased suspended sediment reduces the diversity of macroinvertebrates the platypus feed on. Settled sediment fills in deep pools, which reduces habitat and waterway connectivity.





RESIDENTIAL

- **LIMIT BARE SOIL.** Use plants, grasses and mulch to provide ground cover and minimise surface erosion. If you have a pile of soil for a garden project, make sure it is covered by a tarpaulin.
- **MAKE YOUR HOME WATER SENSITIVE.** Creating areas for rainwater to pond and soak into the soil helps reduce sediment run off and reduces stormwater volume and velocity.
- **GET INVOLVED IN COMMUNITY EFFORTS.** Bushcare and other volunteer groups help restore local creek and river bank areas, which improves resilience to erosion.



RURAL / AGRICULTURAL

- **LIMIT LIVESTOCK ACCESS.** Rotational grazing, stock exclusion fencing and off-stream watering help maintain groundcover and reduce streambank erosion and gully formation.
- **WORK IN PARTNERSHIP.** Properties in priority areas are supported by council to improve the condition and health of their waterways, including revegetation, weed control and other works. See ipswich.qld.gov.au/lcpp



DEVELOPMENT / INDUSTRIAL

- **ENVIRONMENTAL COMPLIANCE.** Council does inspections of high-sediment polluting industries and can provide advice on environmental compliance.
- **REPORT POOR CONTROLS.** High-sediment industries (such as landscaping and residential development) are required to use controls such as covers and sediment fences. Reporting excess erosion and sediment to council, including nuisance dust and mud, can help inform compliance action.

WHAT YOU DO MATTERS!

Erosion and sediment are among the most preventable forms of waterway degradation. What you do as a business, around your property, and what happens in your neighbourhood and local area, makes a difference to the health of our waterways.

SEE IT, REPORT IT, STOP IT

CONTACT: Ipswich City Council to report complaints about improper building or other practices resulting in erosion or sedimentation.

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 of muddy water adds up to a muddy river."

