City of Ipswich

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Erosion and Sediments in Ipswich Waterways

WHAT IS EROSION?

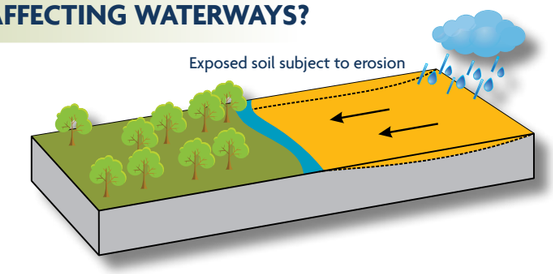
Erosion is the movement of soil from one location to another by wind or water.

Erosion is recognised as the greatest land degradation issue facing rural Australia. With proper understanding and application of good land management practices, it is perhaps the most preventable form of land degradation. It is important to remember that erosion is a natural process and plays a role in shaping our waterways.

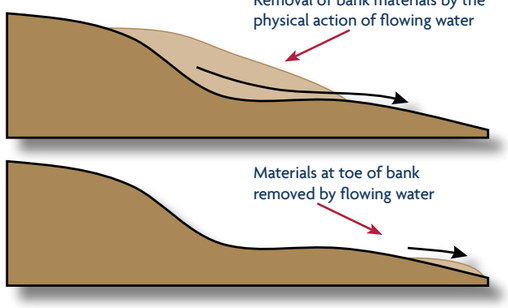
With European settlement came the introduction of intensive agriculture, clearing of vegetation, and urban development. Erosion has since become a degrading process in many areas, threatening riparian land, water quality and aquatic habitats.

WHAT ARE THE DIFFERENT TYPES OF EROSION AFFECTING WATERWAYS?

Surface Erosion - occurs where bare soil has been loosened and is then moved during rainfall events. Soil can be loosened by raindrops, frost, wind, and stock trampling along waterways and creek crossings.



Bank Scour



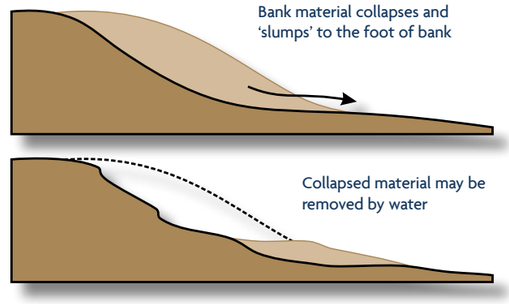
Scouring - often occurs at the toe of a bank (i.e. at the water's edge) where flowing water scours or washes away the bank soil. Scouring is also common on the outside bend of a waterway where the flow is at its fastest. Native vegetation along the waterway protects the bank against scouring by slowing the speed of water and providing a buffer (protective layer) over the soil. Scouring often removes soil around tree roots causing the tree to fall and remove a large section of the bank soil.

Slumping - occurs when the creek bank is weakened and sections of the bank collapse into the waterway.

There are two main causes for slumping:

- With heavy rainfall the bank soils become saturated and heavy and they are more likely to collapse.
- When the lower section of a bank is washed away over time (under cutting) the top of the bank will eventually fall into the waterway because it is not supported.

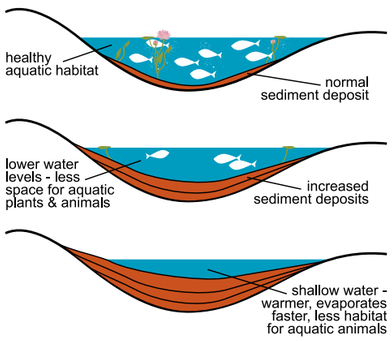
Bank Slumping



WHERE DOES EROSION OCCUR IN IPSWICH?

Erosion occurs along all waterways in Ipswich. Some waterways and catchments are more at risk due to land use practices and soil types, such as; Bundamba and Deebing Creek catchments which have areas of highly erosive soils. Removal of vegetation across the catchments and along the waterways increases the risk of erosion. These catchments require particularly stringent management strategies to reduce current and future erosion and sedimentation.

WHAT IS SEDIMENT?

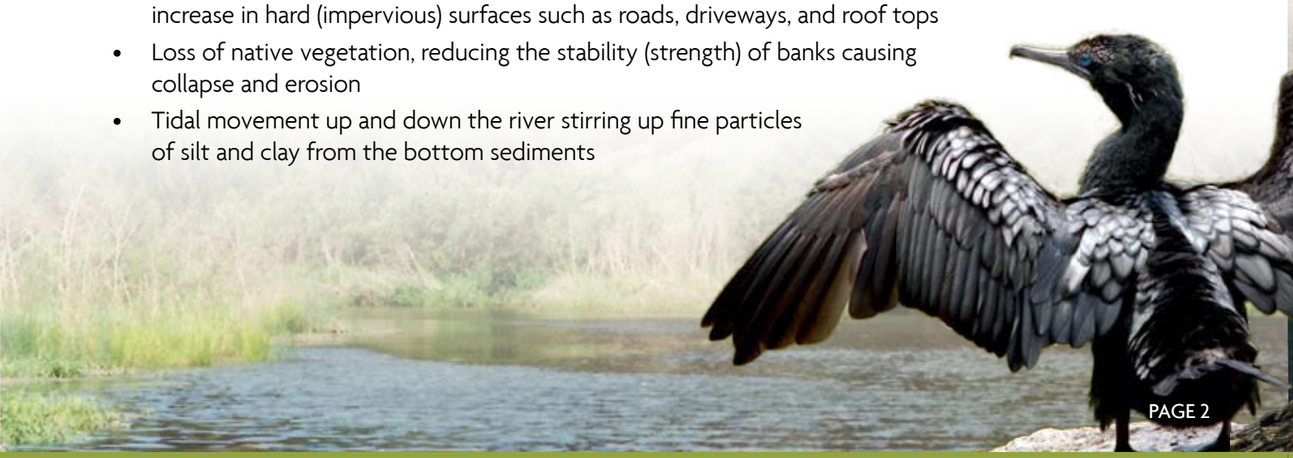


Sediment is the soil particles collected and transported by water movement, including gravel, sand, silt and clay. Sediment leads to the build up of soil along and within waterways.

Sediment carried into our waterways causes them to become brown, dirty (turbid) and unhealthy. The fine particles drop to the bed of the waterway, covering habitats and smothering aquatic organisms. In Ipswich, some soil particles do not fall to the bottom and constrantly remain suspended in the water giving it the 'brown colour'. The waterway is thrown out of balance and often responds to these changes by changing the shape of its channel. Bank erosion may be a sign that the waterway is responding to high sediment loads by moving outwards across the floodplain.

WHAT ARE THE MAIN SOURCES OF SEDIMENT IN THE BREMER RIVER?

- Erosion in rural and urban areas due to clearing of native vegetation, poor land management practices and soil disturbance during urban development
- Faster movement of water carrying large quantities of soil particles across urban areas due to an increase in hard (impervious) surfaces such as roads, driveways, and roof tops
- Loss of native vegetation, reducing the stability (strength) of banks causing collapse and erosion
- Tidal movement up and down the river stirring up fine particles of silt and clay from the bottom sediments



HOW DOES SEDIMENT IMPACT ON OUR WATERWAYS?

Suspended sediments have a major impact on the aquatic environment, altering habitats for aquatic organisms and reducing light penetration for plant growth. Water quality is also degraded due to the addition of pollutants such as nutrients, heavy metals and microbes, attached to sediment particles. Other chemicals in stormwater attach themselves to sediment particles, which means that large amounts of sediment result in more chemicals in the creeks and rivers. Sedimentation is arguably one of the most devastating impacts on our waterways requiring immediate attention.

MANAGING EROSION AND SEDIMENT

Sediment and erosion problems occur throughout the entire catchment with the majority of sediment coming from cleared agricultural land within rural areas. However, when considering management strategies it is important to realise that urban areas contribute more than twice as much sediment per hectare during rain periods.

Some of the ways to manage erosion and sediment include:

- using contour banks and retaining soil cover (mulch) in agricultural areas
- limiting stock access to waterways
- covering stockpiled soils and landscaping material
- slowing down water movement
- using erosion control techniques and diversion of run-off from construction sites
- revegetate construction sites, riparian zones, and cleared land as soon as possible

Further Information:

- www.qld.gov.au
- www.catchmentsandcreeks.com.au
- www.healthywaterways.org

For further information contact
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