

reef beat

river to reef



nutrients & sediments

What are nutrients & sediments?

ALL plants and animals need nutrients to grow, however in excessive amounts nutrients can be harmful to marine life. There are two main types of nutrients nitrogen and phosphorous and these exist in several forms in marine waters. Other types of nutrients include potassium and sulphur. Sediments are fine particles of soil, sand and other minerals or organic matter that is eroded from land and carried in surface waters. Sediment occurs naturally in the Great Barrier Reef, however human activities and land uses have caused excessive amounts of sediments to be discharged to the Reef. Around four times as much sediments and nutrients are now discharged to the Great Barrier Reef as occurred before settlement.

How do they reach the Great Barrier Reef?

NUTRIENTS enter the marine environment through creeks, rivers and estuaries. A large amount of nutrients are discharged to the Great Barrier Reef during floods, but they can also be discharged to the Reef at all times of the year through run-off, wastewater, stormwater and sewage discharge. Human activities such as urban development, agriculture and aquaculture are all contributors of sediment and nutrient discharges to the Great Barrier Reef. The most common way for sediment to reach the waters of the Great Barrier Reef is through run-off and soil erosion.



Impacts of nutrients

HIGH nutrient concentrations result in a range of impacts on coral communities and under extreme situations can cause coral reef communities to collapse. Excess nutrients in the Great Barrier Reef contribute to declining water quality and can severely harm corals by:

- promoting phytoplankton (microscopic floating plants) growth, which in turn supports increased numbers of filter feeding organisms such as tubeworms, sponges and bivalves that compete with coral for space
- causing macroalgal blooms, which may overgrow coral structures, out-competing coral for space and shading coral colonies from sunlight
- causing excessive phosphorus concentrations, which weakens the skeletons of hard corals
- inhibiting breeding in some coral species and reducing recruitment to the population.



Impacts of sediments

EXCESSIVE inputs of sediment from the land to the Great Barrier Reef can lead to reef destruction through burial, disruption of breeding habits and harmful shifts in coral communities. Sediment affects coral by:

- smothering them when particles settle out (sedimentation)
- reducing light availability (turbidity)
- potentially reducing coral photosynthesis and growth.

Elevated sediment and nutrient concentrations in severe floods can even be harmful to seagrass beds as they can cause a dramatic reduction of light availability, which limits the seagrasses ability to manufacture food.

How do they impact on the Great Barrier Reef?

PRIOR to European settlement over 150 years ago, the Great Barrier Reef was not nutrient rich. Corals prefer to live in waters with low amounts of nutrients and sediments, as they need clear water and sunlight to survive. The excess nutrients and sediments running into our waterways and the Great Barrier Reef are impacting on the health of reefs and other important habitats.

Doing your bit to look after it!

YOU can do your bit to help decrease the amount of nutrients and sediments entering the Great Barrier Reef by:

- Using phosphate-free and biodegradable products
- Planting ground cover and trees over areas with exposed soil
- Planting garden beds and vegetation strips around your yard or school grounds to help minimise run off.