

# Catchment runoff

## What does the Outlook Report say about catchment runoff?

The Great Barrier Reef, especially much of its inshore area, is being affected by increased sediments, nutrients and pesticides in catchment runoff.

With recent advances in agricultural practices and the uptake of additional government programs, there has been a reduction in sediment and nutrient inputs into some coastal river systems. A long lag time is expected before there are positive effects on marine water quality.

The community knowledge base has increased, especially where water quality improvement plans are in place and there are high levels of volunteer involvement in fieldwork and monitoring programs.

Changes in water quality affect the biodiversity of reef systems. For example, higher concentrations of pollutants such as suspended sediments, nitrogen and phosphorus, may result in more macroalgae and less hard coral diversity. Such a shift affects the overall resilience of the ecosystem.

The effects of degraded water quality on the Great Barrier Reef include the reduction of hard coral cover at some inshore reefs; the increase of diseases and crown-of-thorns starfish outbreaks; and a reduced ability for coral reefs to recover from bleaching or crown-of-thorns starfish outbreaks.

A decline in inshore habitats as a result of polluted water will have economic and social implications for industries and communities that derive an income from these areas. Potential economic implications include declines in fish populations important for fishing.

## How effectively is catchment runoff managed?

Catchment runoff and associated water quality is identified in the Outlook Report as the second most significant pressure on the Reef and is expected to have significant compounding effects with climate change.

Water quality is a social as well as environmental issue and is being addressed as such by managers. The knowledge base relevant to water quality within the managing agencies has increased in the last three to five years.

Introduction of the *Great Barrier Reef Marine Park (Aquaculture) Regulations 2000* resulted in a significant improvement in the environmental performance of land-based aquaculture facilities.

The Report recognises that management of issues like water quality and catchment runoff are challenging given the broad scale and complex jurisdiction involved. Substantial resources are being provided to improve the water quality of the Great Barrier Reef, but progress is slow and patchy.

The Report acknowledges that effective implementation of actions under the Reef Water Quality Protection Plan and Reef Rescue initiative will contribute to improvements in water quality; however improvements are likely to take many years to be translated into measurable changes.

*The Great Barrier Reef receives the runoff from 38 major catchments which drain 424 000 km<sup>2</sup> of coastal Queensland.*

*Over the past 150 years sediment inflow onto the Great Barrier Reef has increased four to five times, and five to 10 fold for some catchments.*

*Inorganic nitrogen and phosphorous continue to enter the Great Barrier Reef at enhanced levels, two to five times for nitrogen and four to 10 times for phosphorous relative to pre-European settlement and pesticides are now being detected in inshore waters.*