

# Report Card 2006

for the waterways and catchments of South East Queensland



The annual Ecosystem Health Report Card for the waterways of South East Queensland (SEQ) is the flagship product of the Ecosystem Health Monitoring Program (EHMP). It presents an easy-to-understand snapshot of the health of the region's freshwater and estuarine/marine environments, providing 'A to F' ratings for 18 catchments, 19 estuaries and Moreton Bay. The Report Card is an important tool used to communicate to local and State government agencies, industry and the community how we are tracking in terms of protecting and improving waterway health in the region. Continuing its 'catchment to coast' philosophy, the 2006 Report Card is the culmination of thorough scientific monitoring at 381 freshwater and estuarine/marine sites during the period of July 2005 to June 2006, in an area extending from Noosa in the north, south to the NSW border and west to Toowoomba. The EHMP Report Card has been presented each year since 1999, providing insights into issues affecting waterways and the effectiveness of investments in waterway and catchment management during this time.

## Estuarine and Marine Monitoring

2005-06 marks the fourth year that the full Estuarine and Marine EHMP has monitored waterways throughout SEQ, from the Noosa River estuary in the north to the Currumbin Creek Estuary in the south.

The overall ecosystem health of Moreton Bay in 2005-06 has remained similar to last year, with two of seven reporting zones receiving a drop and two receiving an increase in their Report Card grades. The Southern and Central Bays both received poorer grades largely due to an increase in phytoplankton biomass. The Southern Bay and Bramble Bay are now the lowest rating zones in Moreton Bay, characterised by poor water clarity and elevated phytoplankton biomass. The Eastern Banks and Eastern Bay both retained excellent ecosystem health.

Overall, ecosystem health in SEQ estuaries has decreased in 2005-06, with five of the 19 estuarine systems assessed receiving a drop in their Report Card grades.



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The Bremer, Albert, Oxley and Logan estuaries all received a grade of 'F' (or 'Fail'), with high nutrient concentrations and sediment loads affecting ecosystem health. Ecosystem health ratings for the Sunshine Coast estuaries decreased slightly compared with last year, with increases in nutrient concentrations in the Noosa River and Maroochy River estuaries. Of the Gold Coast estuaries, Tallebudgera Creek received a drop in Report Card grade, however still retains 'good' ecosystem health.

## Freshwater Monitoring

The 2006 Report Card marks the end of the fourth year since full implementation of the Freshwater EHMP to monitor waterways in the catchments of SEQ. As in previous years, this Report Card draws on data for 18 ecological indices within five indicator types: physical & chemical, nutrient cycling, ecosystem processes, aquatic macroinvertebrates, and fish. The data for each index/indicator were collected during both spring 2005 (pre-wet) and autumn 2006 (post-wet), at each of 127 sites, using the same methods as in previous years.

Although the overall score of 0.79 for streams in the region this year was high, it follows a steady decline from 0.83 in 2002-03 to 0.81 in 2003-04 to 0.80 in 2004-05. This supports the perception of a general decline in the ecological condition of regional waterways as the current period of below average rainfall continues. Accompanying this decline are seven decreases in Report Card grades. However, almost half (eight) of the 18 reporting areas received the same grade as last year, and three received higher grades. As per last year, no reporting area received an 'A' grade; the highest allocated grade was a 'B', being awarded to the Noosa, Mooloolah and Albert catchments. Only the Lower Brisbane and Redlands reporting areas failed to achieve an acceptable standard of stream ecosystem health and received the lowest grade ('F').



NATURAL RESOURCES AND WATER

### EHMP Funding Contributors 2005-06



## Setting the scene

South East Queensland (SEQ) has one of the fastest growing populations in Australia, currently standing at 2.73 million people. By 2026, this is expected to increase to around 4 million, bringing with it significant pressures affecting the health of the region's waterways.

Since European settlement SEQ's catchments and many of its waterways have been significantly altered, including dams and weirs regulating river flows, and the dredging of rivers and Moreton Bay. This has resulted in an overall decline in aquatic species, habitat diversity and water quality. Widespread land clearing has resulted in changed flows, increased erosion and significantly increased loads of nutrients and sediment into SEQ's waterways. More than ever, coordinated efforts at both local and regional level are required to ensure the health of SEQ's waterways.

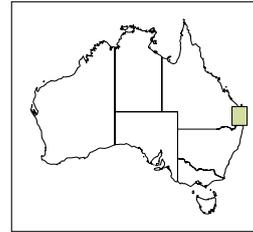
## EHMP – taking the pulse of South East Queensland's waterways

Since 1999, the regional Ecosystem Health Monitoring Program (EHMP) has reported on the health of SEQ's waterways, using a broad range of biological, physical and chemical indicators. Currently, 127 freshwater sites are monitored twice a year (in spring and autumn), and 254 estuarine and marine sites are monitored on a monthly basis, making it one of the most comprehensive aquatic monitoring programs in Australia. The EHMP is underpinned by rigorous science, and is managed by the Moreton Bay Waterways and Catchments Partnership (the Partnership) on behalf of its stakeholders. The program is implemented by a large team of experts from the Queensland Government (the Department of Natural Resources and Water, Environmental Protection Agency and Queensland Health Scientific Services), universities (the University of Queensland and Griffith University) and CSIRO.

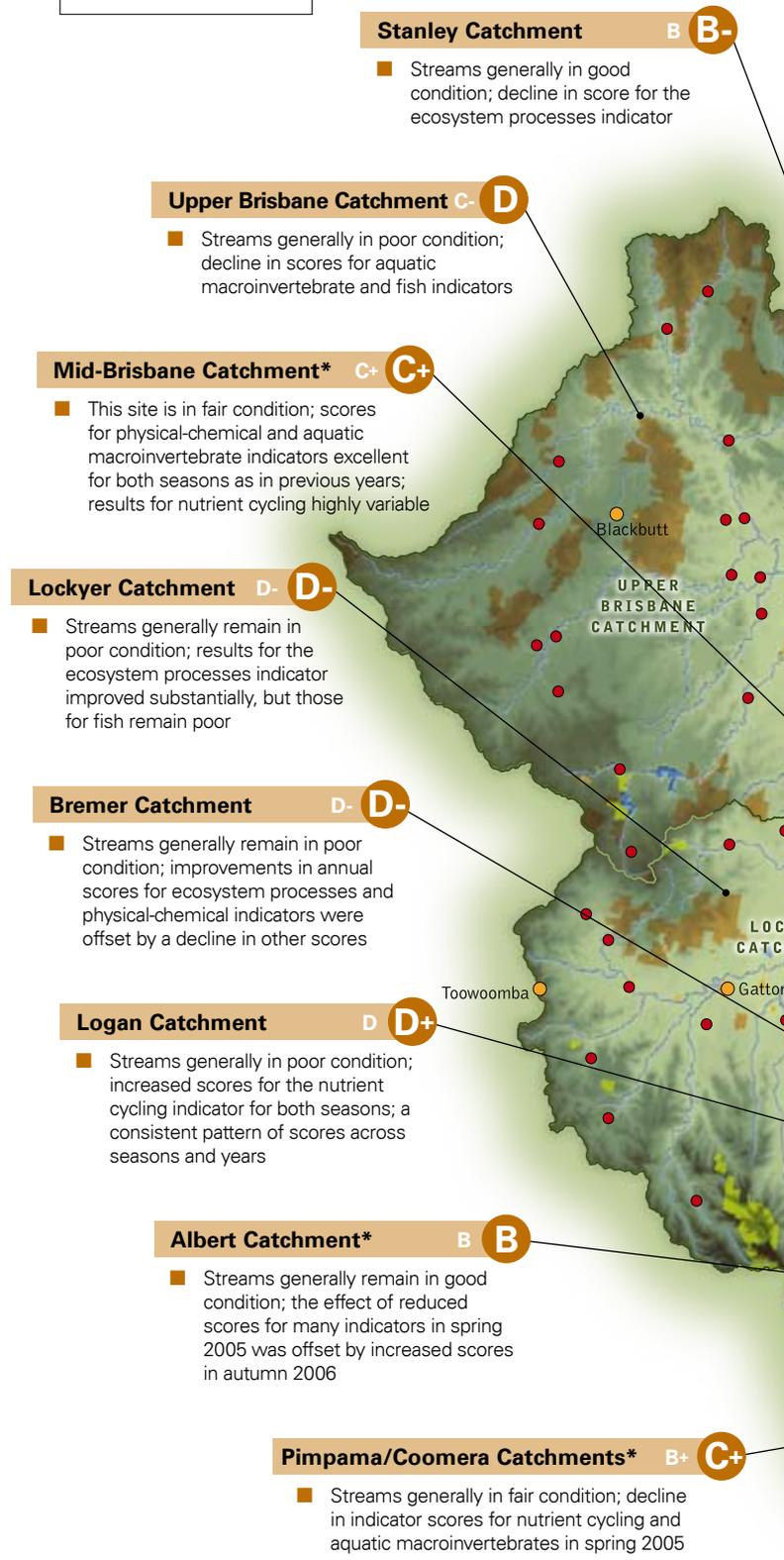
The EHMP is an important component in informing and shaping management actions aimed at reducing pressures on the region's waterways. It uses an outcome-based approach to monitoring, focussing and assessing the response of aquatic ecosystems to both natural pressures and human activities. Information collected in the EHMP is used to advise councils and land managers on areas of declining health, report on the effects of different land uses on aquatic ecosystems, and evaluate the effectiveness of management actions aimed at improving and protecting aquatic ecosystem health. The program also helps to identify any emerging issues that may require intervention. To achieve the above, the EHMP is embedded in the Partnership's adaptive management framework, linking monitoring to management. The regional scale approach and ecosystem-based objectives ensure that effective management strategies are implemented throughout SEQ.

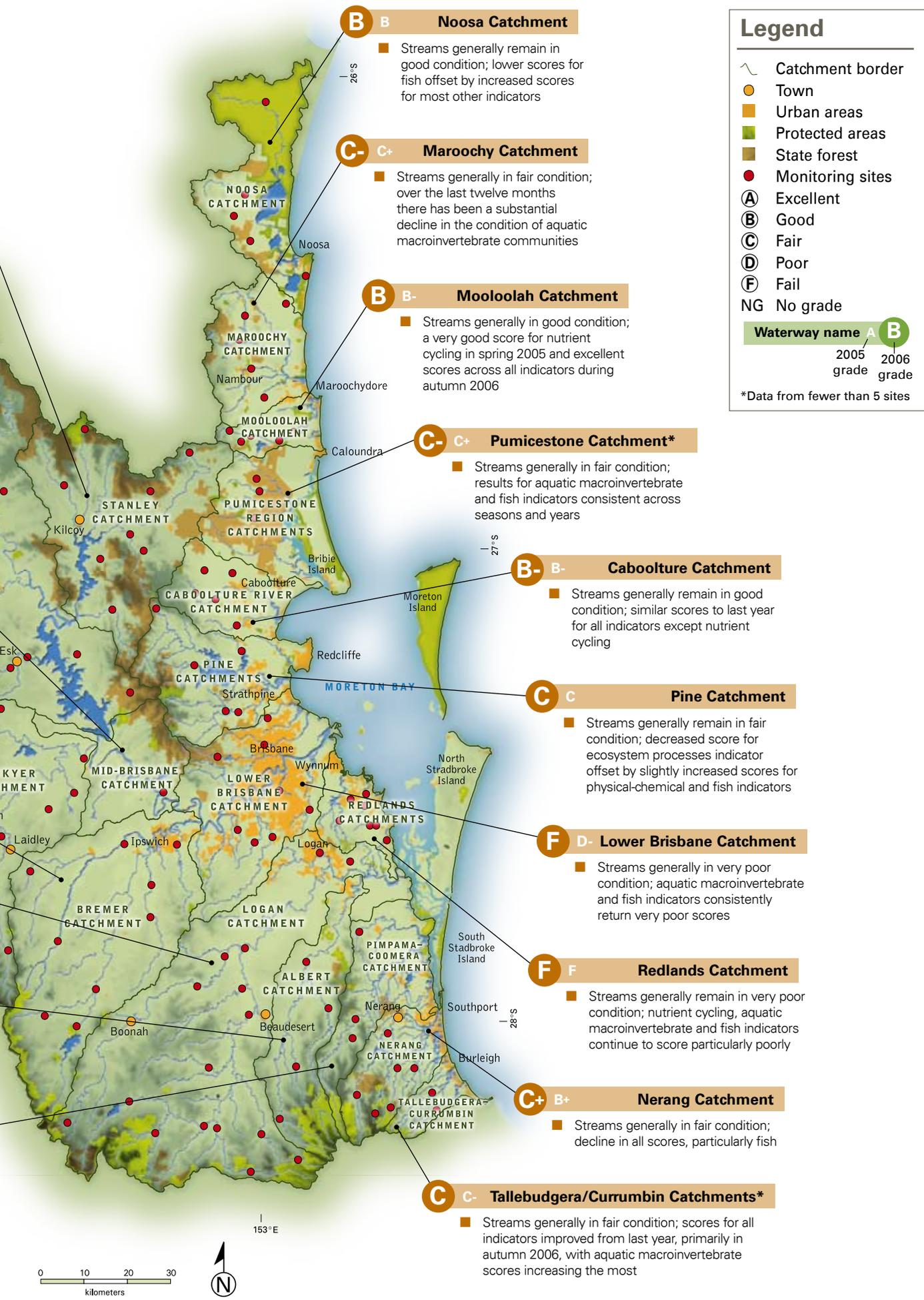
For detailed information on the indicators and methods employed in the EHMP please refer to the Ecosystem Health Monitoring Program's Annual Technical Reports published by the Moreton Bay Waterways and Catchments Partnership, or visit the EHMP on the web at:

[www.ehmp.org](http://www.ehmp.org)



EHMP study area,  
South East Queensland, Australia





**Mooloolah**  
 Good but habitat

**Pumicestone**  
 Generally an improvement in the so

**Caboolture**  
 Increase in dissolved oxygen and upper reaches

**Pine Rivers**  
 Elevated nutrient levels, dissolved oxygen reaches

**Cabbage Tree Creek**  
 High nutrient levels, dissolved oxygen

**Tingalpa Creek**  
 High nutrient levels, middle and upper reaches

**Eprapah Creek**  
 High, but improving levels in the upper reaches

**Brisbane River**  
 High nutrient and turbidity, and low dissolved oxygen in middle reaches

**Oxley Creek**  
 High nutrients and turbidity, and low dissolved oxygen

**Bremer River**  
 High nutrient levels, with low dissolved oxygen

**Logan River**  
 Increased turbidity, nutrient levels in middle and upper reaches

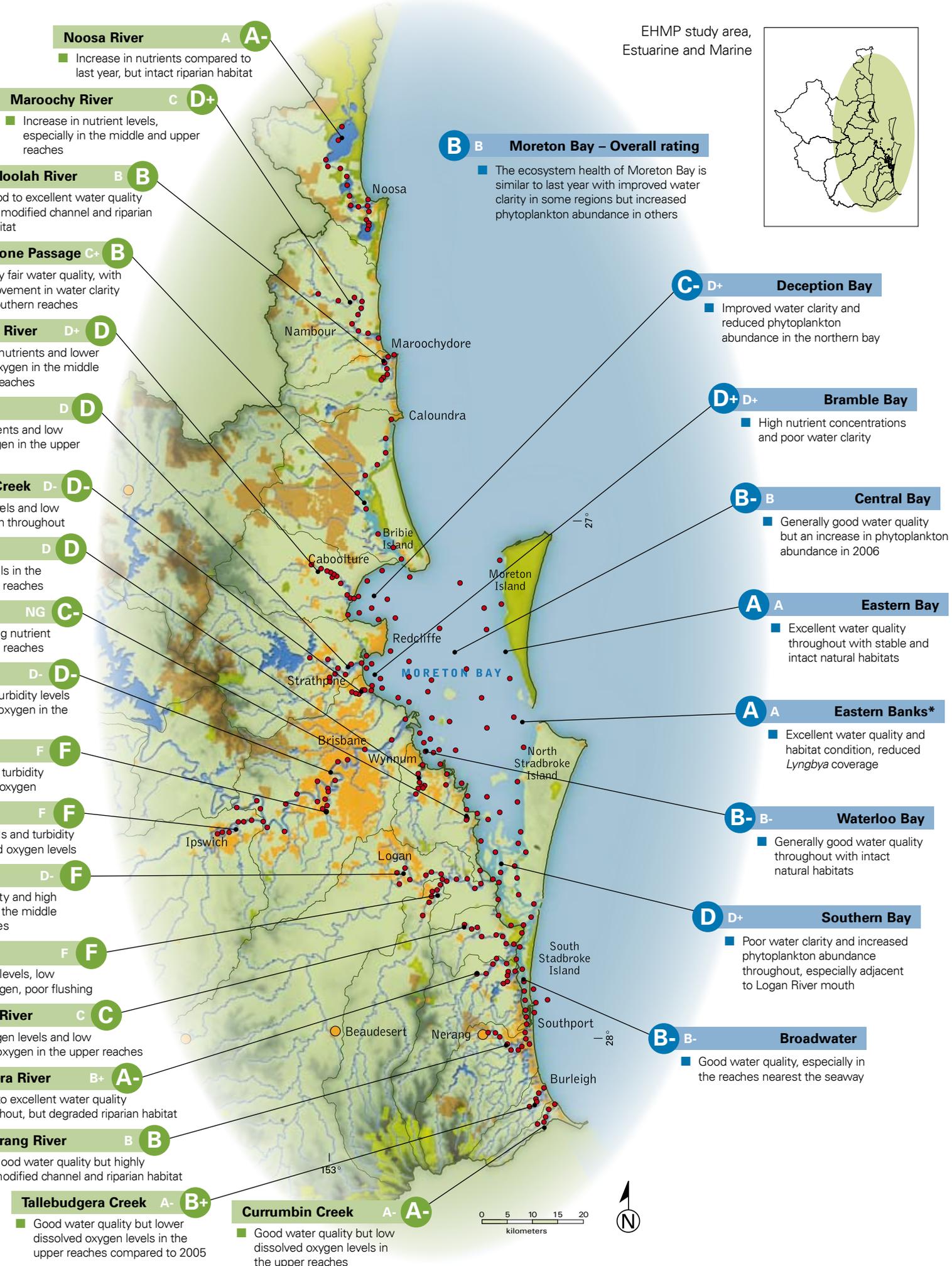
**Albert River**  
 High nutrient levels, dissolved oxygen

**Pimpama**  
 High nitrogen, dissolved oxygen

**Coome**  
 Good through

**Ne**  
 G

# Estuarine and Marine Report Card 2006





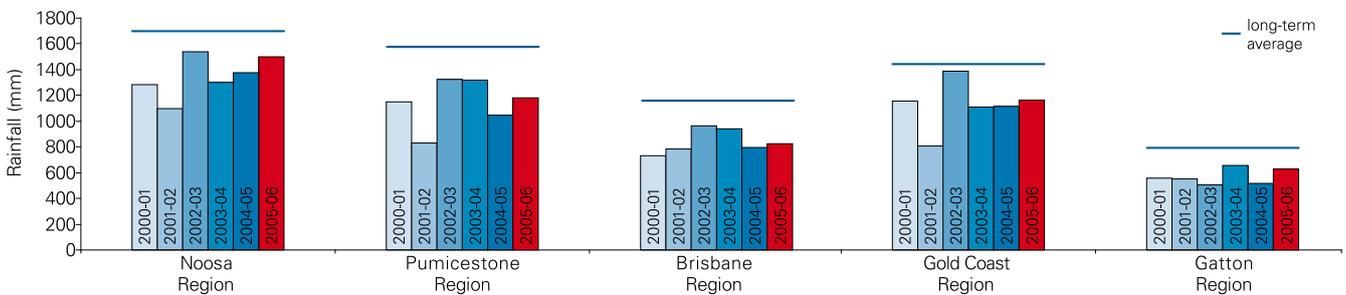
## Climate and rainfall

With a subtropical climate, most of the rainfall in South East Queensland (SEQ) usually occurs between November and February. However, rainfall patterns in the region can vary greatly, both temporally from year to year, and spatially between and within catchments. Coastal catchments in SEQ generally receive higher rainfall than catchments in the western (inland) region.

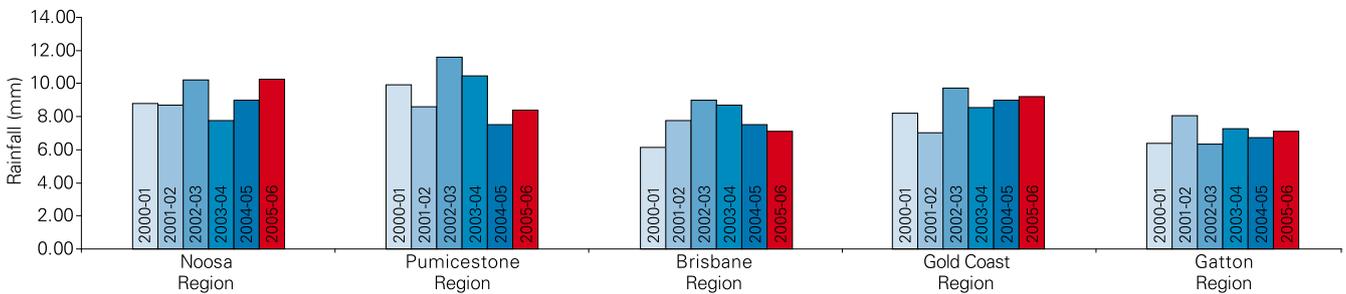
In 2005-06, total rainfall across SEQ's coastal and western regions was similar to that of 2004-05, and generally remained under the long-term average for the sixth consecutive year. Average daily rainfall on days when rain has fallen (rain-day averages) was higher in 2005-06 in most catchments, except for the Brisbane region where it was slightly less compared with 2004-05. The Pumicestone, Upper Brisbane, Currumbin and Mooloolah regions all had increases in rain-day averages compared with the previous year.

In late spring and early summer of 2005-06, SEQ experienced significant localised rainfall events resulting in periods of increased stream flow within the region. Some freshwater EHMP data collection was delayed because of these stream flows so that the increased flows did not adversely impact upon indicator scores. The Noosa River and Maroochy River estuaries in the north, the Tingalpa Creek and Hilliards Creek estuaries in the central areas, and the Currumbin Creek and Broadwater estuaries in the south experienced high rainfall events that affected water quality in these systems. In general, these events occurred in the summer months in those catchment areas adjacent to the coast. In contrast, in 2004-05 rainfall occurred later in the year in the autumn months.

**a. Total Annual Rainfall**



**b. Rain-day averages**



Total annual rainfall (a) and Rain-day averages (b) in the Noosa, Pumicestone, Brisbane, Gold Coast and Gatton regions from 2000 to 2006. Rain-day averages (b) are the average daily rainfalls for each year on days when rain has fallen.



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### The 2006 EHMP Report Card Format

- Part 1 – Report Card grades
- Part 2 – Overview of management responses during the 2005-06 reporting year
- Part 3 – Four sub-regional summaries:
  - a. Northern Catchments
  - b. Southern Catchments
  - c. Western Catchments
  - d. Moreton Bay Catchments
- Part 4 – Summary of EHMP methods



Visit [www.ehmp.org](http://www.ehmp.org)

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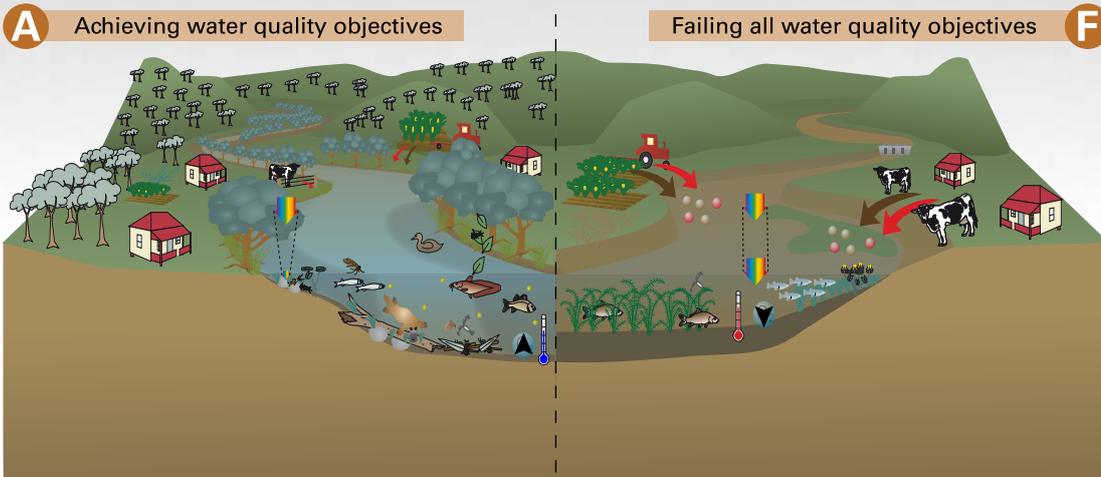
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# Protecting and enhancing ecosystem health



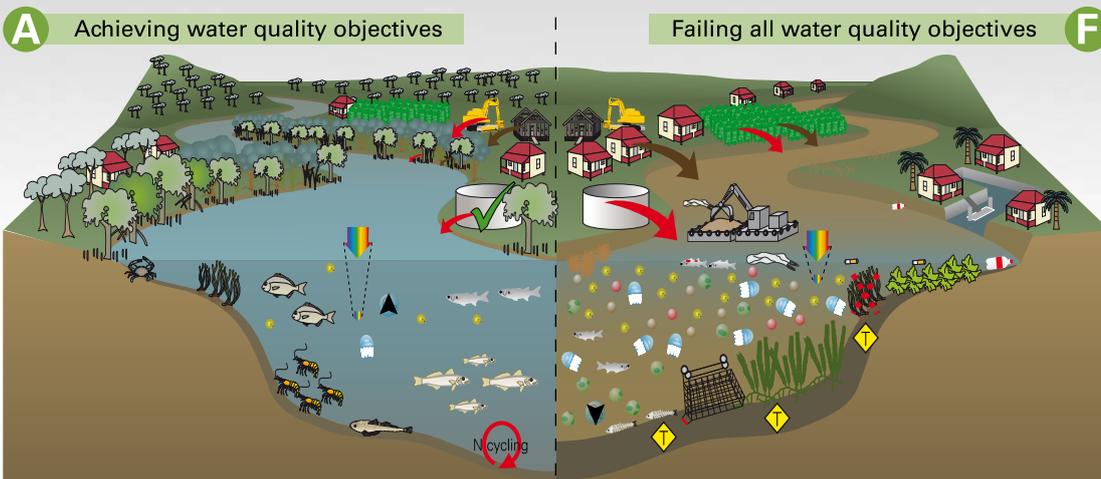
## Freshwater ecosystem



### Environmental Goals

1. Protect/restore riparian vegetation and habitat
2. Protect fish and macroinvertebrates
3. Minimise nuisance algal blooms and growth of aquatic weeds
4. Minimise sediments and nutrients

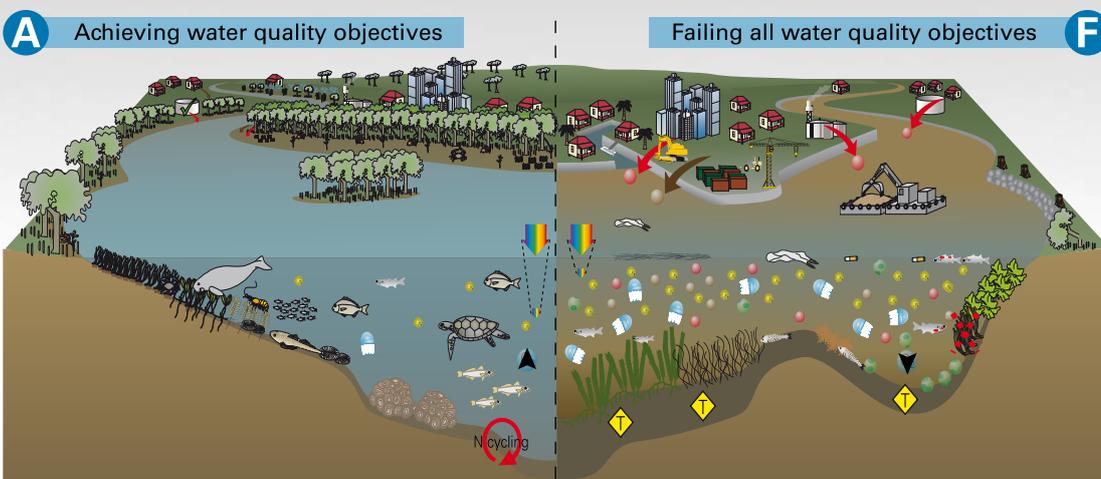
## Estuarine ecosystem



### Environmental Goals

1. Protect/restore estuarine habitats; seagrass, mangroves, saltmarsh and riparian vegetation
2. Protect fish and macroinvertebrates
3. Minimise nuisance algal blooms and growth of aquatic weeds
4. Minimise sediments and nutrients

## Marine ecosystem



### Environmental Goals

1. Protect/restore marine habitats; seagrass, mangroves and saltmarsh
2. Protect fish and macroinvertebrates
3. Minimise nuisance algal blooms
4. Minimise sediments and nutrients

