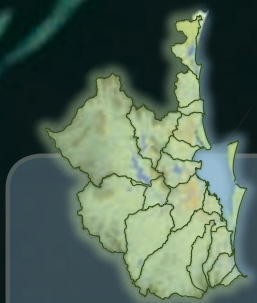
Grades and Overview October 2008

HEALTHY WATERWAYS
Because we're all in the same boat

EcosystemHealth Monitoring Program

Report Card 2008

for the waterways and catchments
of South East Queensland



Maps Inside

Dedicated to a better Brisbane
Gold Coast City Council
Logan City Council
Redland City Council
Sunshine Coast Regional Council
Toowoomba Regional Council
City of Ipswich
Moreton Bay Regional Council
Scenic Rim Regional Council
Queensland Government Environmental Protection Agency Natural Resources and Water Queensland Health
SEQ Catchments
The University Of Queensland
Griffith University
CSIRO
Port of Brisbane
seqwater
JBS Swift & Company
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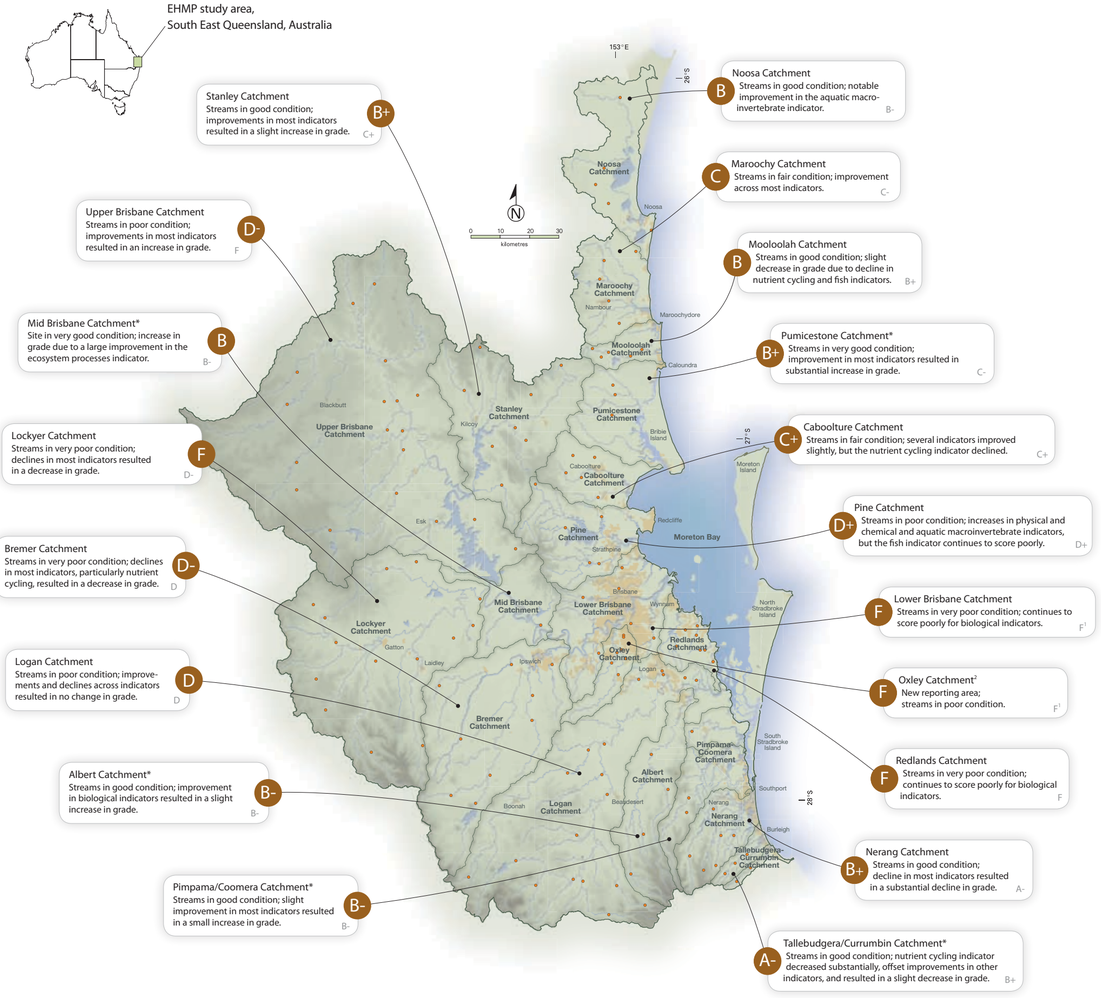
Freshwater Report Card 2008



Grades—what do they mean?

Ecosystem Health Report Card Grades ('A' to 'F') are generated for 19 catchments and 18 estuaries in South East Queensland and Moreton Bay. Parameters for freshwater, estuarine and marine ecosystems are assessed against guidelines resulting in the application of a single grade for each system.

- **A** Excellent: Conditions meet all set ecosystem health values; all key processes are functional and all critical habitats are in near pristine condition.
- **B** Good: Conditions meet all set ecosystem health values in most of the reporting region; most key processes are functional and most critical habitats are intact.
- **C** Fair: Conditions meet some of the set ecosystem health values in most of the reporting region; some key processes are functional and some critical habitats are impacted.
- **D** Poor: Conditions are unlikely to meet set ecosystem health values in most of the reporting region; many key processes are not functional and many critical habitats are impacted.
- **F** Fail: Conditions do not meet set ecosystem health values; most key processes are not functional and most critical habitats are severely impacted.

Environmental Goals

Freshwater

- Protect/restore riparian vegetation and habitat
- Protect fish and macroinvertebrates
- Minimise nuisance algal blooms and growth of aquatic weeds
- Minimise sediments and nutrients

Estuarine

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

Marine

- Protect/restore marine habitats; seagrass, mangroves and saltmarsh
- Protect fish and macroinvertebrates
- Minimise nuisance algal blooms
- Minimise sediments and nutrients

Legend

- Catchment border
- Urban areas
- Monitoring sites

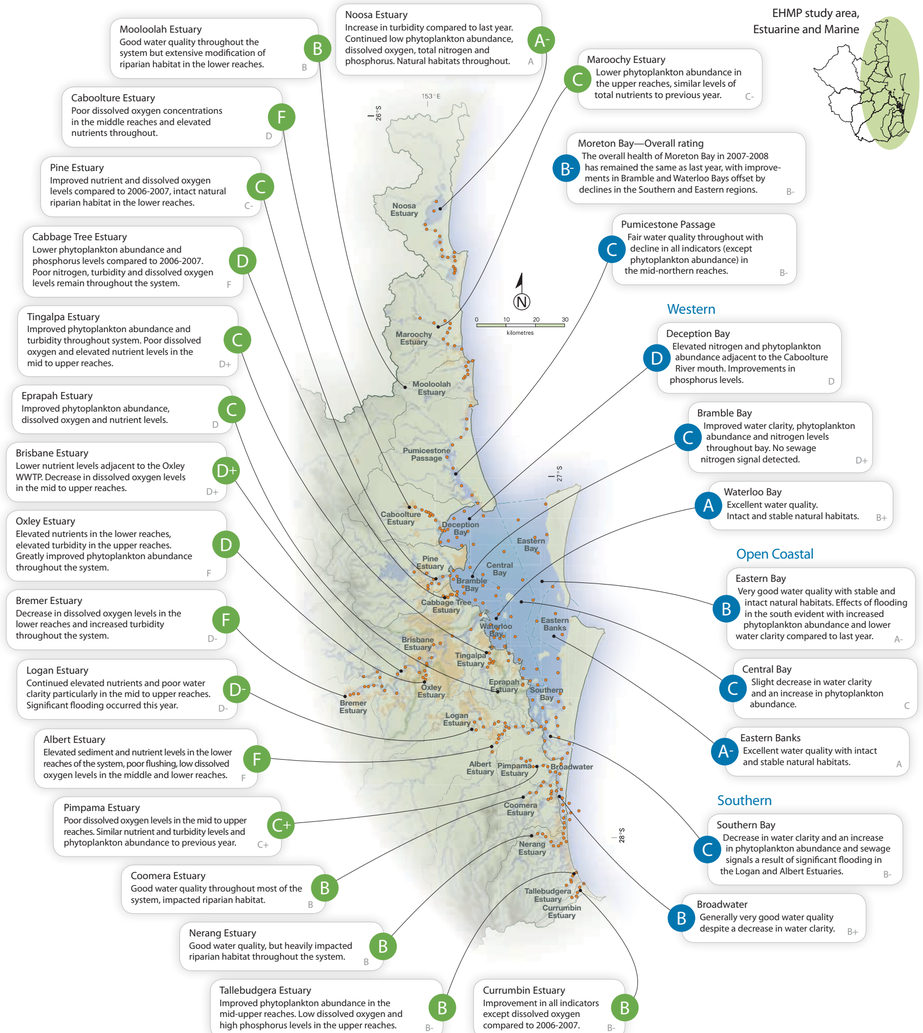
Waterway name
Comments and further detail.
A (2008 grade) / A- (2007 grade)

* Data from fewer than 5 sites

1 Combined Grade for Lower Brisbane and Oxley Creek Catchments in 2007

2 In 2007-2008 five additional freshwater sites were monitored in the Oxley Creek Catchment, hence it has its own reporting area in 2008

Estuarine and Marine Report Card 2008



A snapshot of waterway health

Ecosystem Health Monitoring Program

Since 1999, the Ecosystem Health Monitoring Program (EHMP) has produced an annual Ecosystem Health Report Card. The Report Card gives an 'A to F' health rating for the waterways of South East Queensland (SEQ) and Moreton Bay, providing a succinct 'snapshot' of ecosystem health.

The 2008 Report Card provides grades for 19 catchments and 18 estuaries in SEQ, as well as 9 zones within Moreton Bay, for the period of July 2007 to June 2008. It involves the analysis of data from 135 freshwater and 254 estuarine and marine sites (389 in total).

The EHMP is managed by the South East Queensland Healthy Waterways Partnership and implemented by a large team of experts from the Queensland Government (the Department of Natural Resources and Water (NRW), Environmental Protection Agency (EPA) and Queensland Health Forensic and Scientific Services), universities (The University of Queensland and Griffith University) and CSIRO.

Key messages from the 2008 Report Card

Significant investments to reduce point source pollution in the last decade are now leading to measurable improvements in the eco-system health of western Moreton Bay. However, any consequential improvement in the overall health of Moreton Bay was offset by the impacts of some major flood events which carried extremely high loads of sediments and nutrients from the catchments into rivers and out to the Bay.

The increasing population of South East Queensland, exacerbated by climate variability, is a major challenge to maintaining good ecosystem health in our waterways. To ensure future development occurs without causing further declines, we must continue to identify and undertake actions to improve the health of degraded waterways and protect areas of high ecological value.

Greater investment in protection and restoration is required, particularly in the catchment areas under development pressure, such as expanding urban centres and degraded agricultural areas. One such initiative is the Healthy Country Project, which is a collaboration between SEQ Healthy Waterways Partnership, SEQ Catchments, Department of Primary Industries & Fisheries and South East Queensland Traditional Owners Alliance. Healthy Country aims to find cost-effective ways to reduce sediments and nutrients entering waterways from three priority catchments, Logan-Albert, Bremer and Lockyer, while at the same time aiming to improve river health.

In addition, Water Sensitive Urban Design must be implemented across new and existing urban areas to reduce diffuse loads which contribute to poor water quality and ecosystem health of urban streams.

This Report Card is dedicated to the memory of Dan Wruck – for his enthusiasm and tireless dedication to providing quality data used in generating the Report Cards and for being a constant advocate of the EHMP from its infancy.

Freshwater

There was a slight improvement in the overall score of streams compared to last year due to increased flows especially in the northern catchments. However, some streams that are under pressure from poor riparian condition and catchment land use have shown further deterioration (e.g. Lockyer River from D- to F, and Bremer River from D to F). Urbanised streams in Lower Brisbane and Redlands Catchments have maintained an F rating with slight improvements in some indicators (e.g. physical-chemical) offset by declines in biological (fish and invertebrates) indicators.

NRW

Freshwater EHMP team members conducting sampling for the fish indicator.

Estuaries

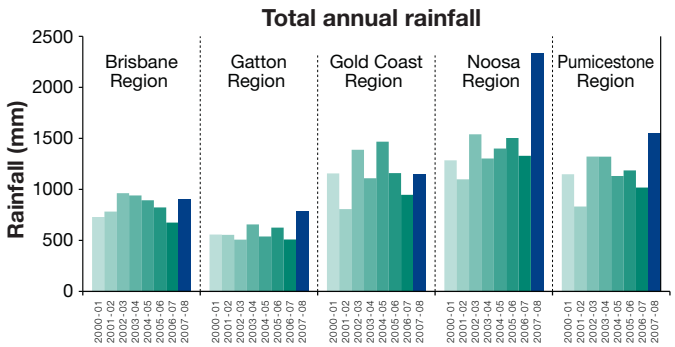
Most of the estuaries in South East Queensland showed improvements in grades this year. Ecosystem health improved significantly in Cabbage Tree, Oxley, Tingalpa and Eprapah Creeks, reflecting significant investments in wastewater treatment plants which led to the reduction of point source pollution. Ecosystem health also improved slightly in the Maroochy, Pine, Tallebudgera and Currumbin Estuaries, with lower nutrient and chlorophyll a levels compared to last year. Increased rainfall events have impacted on some estuaries, with the ratings declining this year for Noosa, Bremer and Caboolture estuaries.

EPA

Estuarine and Marine team member conducting water quality sampling.

Moreton Bay

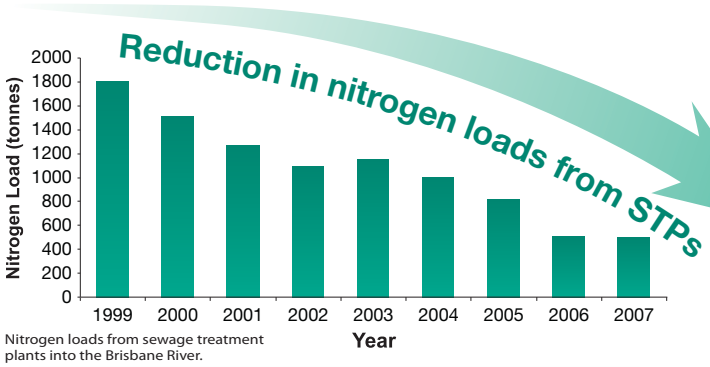
Improvements in ecosystem health have been observed in western Moreton Bay due to significant investments to reduce point source pollution through upgrades to wastewater treatment plants. No sewage signals were detected in Bramble and Waterloo Bays. However, the overall health of Moreton Bay remains the same (B-). Declines in ecosystem health were observed in Southern Moreton Bay, Broadwater, Eastern Bay and Eastern Banks due to the impacts of the January 2008 floods in the Logan and Albert River catchments. Southern Moreton Bay still shows a strong sewage signal.



Total annual rainfall in South East Queensland, showing higher rainfall volumes in Noosa and Pumicestone Passage regions compared to the Gatton, Brisbane and Gold Coast regions.

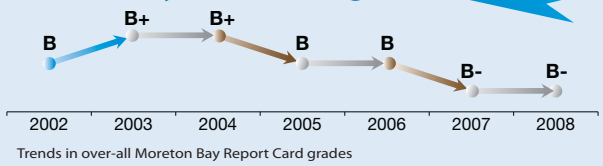
Linking management investments to trends in ecosystem health

The EPA, NRW, CSIRO, Griffith University, University of Queensland and the SEQ Healthy Waterways Partnership have been working together to assess whether key indicators of freshwater and estuarine/marine health have changed in response to management actions over the last decade (Trend Analysis Project).



Nitrogen loads from sewage treatment plants into the Brisbane River.

No significant changes in Moreton Bay overall rating.



Trends in over-all Moreton Bay Report Card grades

There have been significant investments to reduce point source pollution into our waterways. Consequently, in spite of increasing population, we are seeing less sewage nitrogen in Moreton Bay.

Despite these investments, ecosystem health of Moreton Bay remains fairly constant because flood events, like the floods in the Logan and Albert River catchments in January 2008, carry huge loads of sediment and nutrients from the catchments into Moreton Bay.

What is needed next?

We need to prepare our catchments for high rainfall events. This will require significant investments to reduce diffuse loads coming from the catchments including: riparian restoration, channel stabilisation and water sensitive urban design. Better riparian condition and catchment protection will help to make our waterways more resilient to such events. Unless these investments occur, future improvements in the health of the Bay are unlikely. In addition, reduction of point source pollution needs to continue, especially in Southern Moreton Bay, which is still showing evidence of sewage nitrogen loads.

Significant decrease in sewage derived nitrogen in Moreton Bay

Sewage plume maps of Moreton Bay (red areas indicate sewage signal).

SEQ CATCHMENTS

Erosion from January 2008 flood in the Logan and Albert catchments because of poor riparian management.

SEQHWP

Construction without Water Sensitive Urban Design allows diffuse pollution to enter waterways.

SEQ Healthy Waterways Partnership
GPO Box 1434, Brisbane, QLD 4000
Phone: (07) 3403 4206 Fax: (07) 3403 6879
www.healthywaterways.org
For further information contact:
Email: jo.burton@healthywaterways.org

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