

RIVER HEALTH REPORT CARD 2012 - 2013

A SNAP-SHOT OF RIVER HEALTH

In 2012-13 the River Health Monitoring Program entered its fourth year of monitoring in the Georges River and its second year in the Cooks River catchment.

River Health monitors three important ecological indicators to provide an assessment of catchment health: water quality, vegetation and macroinvertebrates.

By combining results of ecological indicators a greater understanding of the Georges and Cooks

ivers' systems is gained. In particular, River Health is investigating the pressures and impacts of an increasingly urbanised catchment.

Findings from the program are being used to identify areas of conservation value, assess effectiveness of on-ground works and identify future sites for remediation.

River Health encourages participation of community members in monitoring activities. Volunteers work alongside ecologists collecting data integral

to assessing the ecological condition of Georges and Cooks Rivers.

Since 2009, volunteers have contributed over 3400 hours of field work to the program while gaining a valuable insight into the dynamic nature of the Georges and Cooks rivers' systems.

River Health receives funding from the Australian Government's Caring for Our Country program as well as in kind support from councils and agencies.



MACROINVERTEBRATES

Macroinvertebrates are small animals without a backbone, such as snails, worms and dragonfly nymphs. They live in all freshwater creeks and streams and are particularly sensitive to changes in water quality. River Health surveys macroinvertebrates in spring and autumn each year. Monitoring these animals provides a greater understanding of how aquatic ecosystems within the Georges and Cooks Rivers catchments respond to environmental pressures.



WATER QUALITY

Water quality is an important factor to maintaining a healthy ecosystem. River Health monitors water quality in streams, wetlands and estuaries of the Georges and Cooks Rivers throughout the year. Monitoring water quality is providing us with a better understanding of how urbanisation and changed land use practices are affecting the health of the river and estuarine ecosystems.



VEGETATION

Healthy vegetation communities are important for maintaining a functioning ecosystem. Vegetation plays a major role in providing habitat, nutrient cycling, regulation of temperature and filtration of urban runoff. River Health assesses riparian (stream bank) and estuarine vegetation every three years. By monitoring these communities we are gaining a better understanding of their condition and effectiveness in maintaining healthy ecosystems in the Georges and Cooks Catchment.

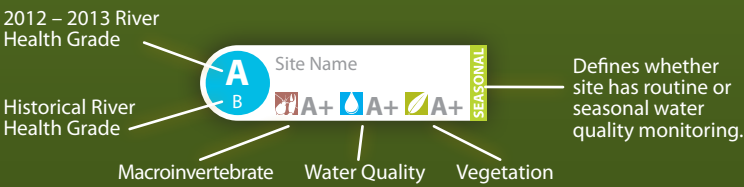
THE GRADING SYSTEM

River Health indicators are assessed against environmental guidelines allowing the award of a grade between A+ and F-.

GRADE	CONDITION
A+	EXCELLENT
A - B+	GOOD
B - C-	FAIR
D+ - F-	POOR

INTERPRETING GRADING ICONS

This diagram shows an example grading box. Use this example to interpret the results from the individual sub catchments.



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GEORGES RIVER

The Georges River catchment covers an area of approximately 960 km2 and has a population of over 1 million people. It begins its journey 60km south west of Sydney near the town of Appin and flows north towards Liverpool, before turning east at Chipping Norton Lakes and enters the sea at Botany Bay.

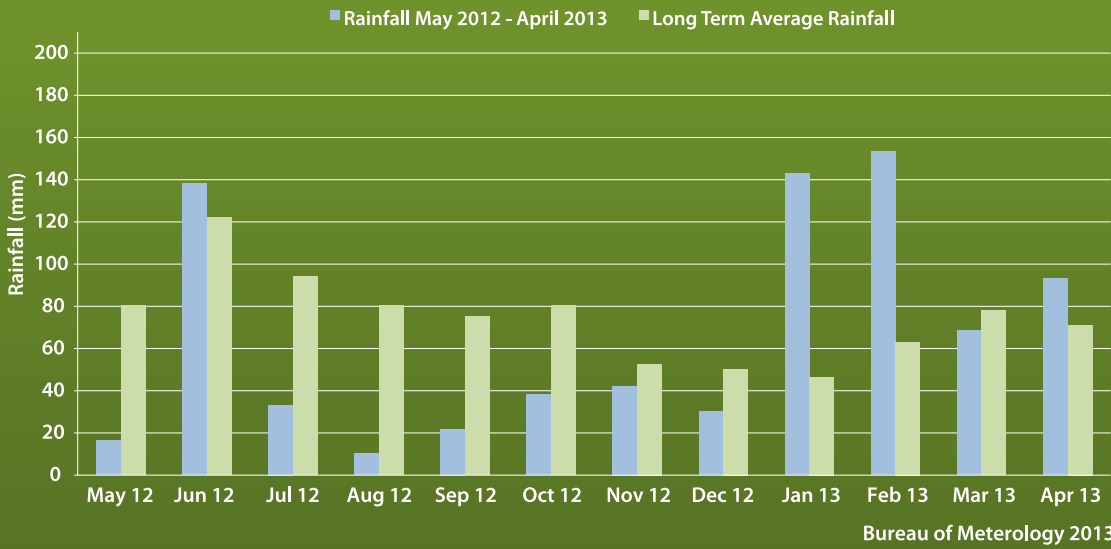
The river has a number of important tributaries including Bunbury Curran Creek, Cabramatta Creek, Prospect Creek, Mill Creek and the Woronora River. Land use within the catchment includes industrial, agricultural and mining while approximately 45% remains in natural or near natural condition.

COOKS RIVER

The Cooks River begins as a small stream near Graf Park in Yagoona and flows eastward for 23km before entering Botany Bay. The catchment covers an area of approximately 100km2 and has a population of over half a million residents, making it one of the most densely urbanised catchments in Australia.

Much of the river and its tributaries are significantly modified and have suffered decades of degradation. Small pockets of vibrant bushland and remnant ecological communities can be found, and there are many committed communities working together to improve river health.

Georges and Cooks Rivers Catchment Seasonal Rainfall



CATCHMENT SEASONAL RAINFALL

After the heavy rainfalls of the La Nina event in early 2012, Sydney experienced its driest end to the year since 2002. Rainfall records for 2012-13 were well below average throughout winter and spring and the early half of summer. This was followed by several significant rainfall events causing flash flooding of many creeks across the Georges and Cooks River catchments, caused by an influx of stormwater and urban runoff. Average rainfall and warm temperatures returned in autumn leading to more normal conditions.

WHAT CAN BE DONE

Improvement of the ecological condition of the Georges and Cooks Rivers requires a whole of catchment approach. Sustainable management of environmental pressures degrading aquatic ecosystems are essential to building resilience in an urbanised catchment.

Rehabilitation of riparian corridors, sediment control and treatment of stormwater are occurring throughout the catchments as part of a collaborative approach between state agencies, councils and the local community.

You can help improve the health of your river too.

- Ask your local council about simple ways to reduce your impact.
- Get involved with your local Bushcare or environmental group.



FIND US AT

Georges River
Georges River, NSW
georgesriver.org.au

Cooks River
cooksriver.org.au



The GRCCC represents member councils in the Georges River catchment of NSW including Bankstown, Campbelltown, Fairfield, Hurstville, Kogarah, Liverpool, Rockdale, Sutherland and Wollondilly.

The GRCCC and the Alliance work together to utilise the combined resources, experience, knowledge and skills within member councils and the community, to address the complex challenges of the Georges and Cooks Rivers.

The River Health Monitoring Program is being undertaken in association with the Georges River Environmental Education Centre, Sydney Water Corporation, Hawkesbury Nepean Catchment Management Authority and NSW Office of Environment and Heritage. River Health is funded by the Australian Government's Caring for Our Country Program.

Acknowledgments: The River Health Monitoring Program was developed by C. Tippler, A. Hanlon and P. Birtles and is modeled on the following existing programs: 1. EHMP (2008). Ecosystem Health Monitoring Program 2006-07 Annual Technical Report. South East Queensland Healthy Waterways Partnership, Brisbane. Centre for Environmental Management, Central Queensland University. 2. IWC (2009). Cobaki and Terranora Ecosystem Health Monitoring Program. 2009 technical report. International Water Centre, Brisbane. 3. Story A.W, Anderson L.E, Lynas J & Melville F (2007). Port Curtis Ecosystem Health Report Card. Port Curtis Integrated Monitoring Project (PCIMP). Cover Photography by C. Evans. © 2012 – 2013 River Health Georges and Cooks Rivers Report Card.



The Alliance is a partnership between eight councils in the Cooks River catchment – Ashfield, Bankstown, Canterbury, City of Sydney, Hurstville, Marrickville, Rockdale and Strathfield.



2012 - 2013 RIVER HEALTH GEORGES AND COOKS RIVERS





OVERALL RIVER HEALTH

Results from 2012-13 River Health monitoring showed the Georges River catchment maintained 'Fair' overall ecological condition.

In its second year of River Health monitoring, the Cooks River showed a slight improvement to the overall grade. However, the ecological condition of the catchment remained 'Poor'.

Below average winter rainfall across both catchments caused reduced flow in most streams. As a result, low dissolved oxygen was recorded at many sites, most notably in undisturbed streams in the upper Georges

River catchment. This was reflected in lower than usual water quality grades for creeks in these pristine bushland areas. Periodic low dissolved oxygen in upper catchment waterways is a natural phenomenon and does not appear to affect macroinvertebrate communities that live within these ecosystems.

Estuary conditions in both Georges and Cooks River catchments were 'Fair'. Intense summer rainfall events followed by long periods of dry, sunny days resulted in occasional algal blooms throughout the estuary, which are typical occurrences under these weather conditions.

B
OVERALL SCORE
GEORGES RIVER

D+
OVERALL SCORE
COOKS RIVER

* This site has been specifically designed to capture and treat stormwater

UPPER GEORGES RIVER

A-
Upper Georges River
14 FRESHWATER SITES
OVERALL SUMMARY

MID GEORGES RIVER

C-
Mid Georges River
13 FRESHWATER SITES
OVERALL SUMMARY

LOWER GEORGES RIVER

B
Lower Georges River
7 FRESHWATER SITES
OVERALL SUMMARY

COOKS RIVER

D
Cooks River
9 FRESHWATER SITES
OVERALL SUMMARY

GEORGES RIVER ESTUARY

B
Georges River Estuary
14 ESTUARY SITES
OVERALL SUMMARY

COOKS RIVER ESTUARY

C
Cooks River Estuary
2 ESTUARY SITES
OVERALL SUMMARY