

RIVER HEALTH REPORT CARD 2011 - 2012

A SNAP-SHOT OF RIVER HEALTH

In 2011-12 the River Health Monitoring Program (River Health), entered its third year of assessment in the Georges and began sampling in the Cooks 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 Rivers

systems can be 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 their catchment.

Since 2009, volunteers have contributed over 2700 hours of field work to the program while gaining a valuable insight into the dynamic nature of the Georges and Cooks Rivers systems.

The program receives funding from the Australian Government's Caring for Our Country as well as 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.

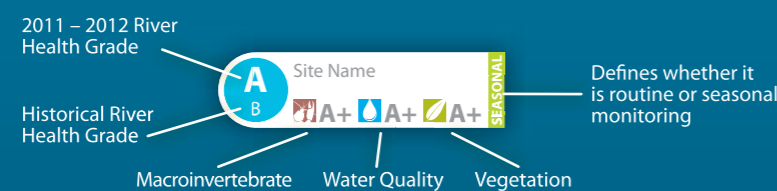
THE GRADING SYSTEM

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.

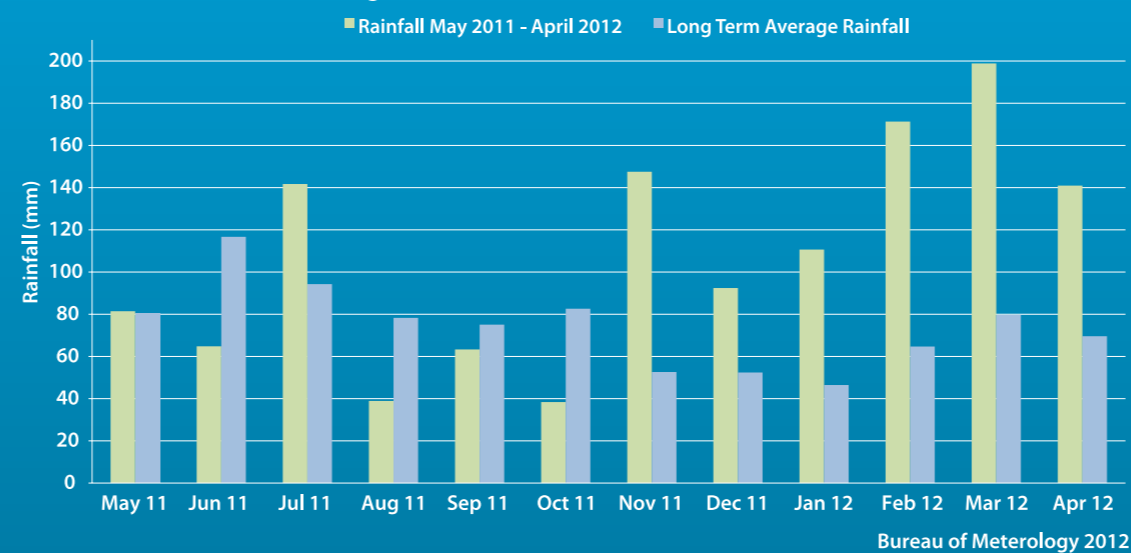
The river has a number of important tributaries including Bunbury Curran Creek, Cabramatta Creek, Prospect Creek, Mill Creek and the Woronora River. Land use within the catchment includes industrial, agricultural and mining while approximately 45% remains in natural or near natural condition.

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. However small pockets of vibrant bushland and remnant ecological communities remain along with a thriving community working together to improve their river's health

Georges and Cooks Rivers Catchment Seasonal Rainfall



CATCHMENT SEASONAL RAINFALL

The development of the La Nina event in late 2011 resulted in Sydney experiencing the wettest spring since 2004. Wet conditions continued throughout summer and into autumn with rainfall records well above long term averages. High rainfall in urbanised catchments often results in declining water quality due to runoff and stormwater pollution placing excess pressure on an ecosystem already under stress from the urban landscape.

WHAT CAN BE DONE

Improvement of the ecological condition of the Georges and Cooks 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 urban runoff and stormwater is 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. Here are some simple ways you can reduce your impact.

- Discard oils, paints and litter in the bin NOT down the drain
- Use less fertilizers and pesticides around your home
- Plant a raingarden and install a rainwater tank

FIND US AT

Georges River
Georges River, NSW
georgesriver.org.au

Cooks River
cooksriver.org.au



2011 - 2012 RIVER HEALTH GEORGES AND COOKS RIVERS



The GRCCC represents Local Government in the Georges River Catchment of NSW. Member Councils include Bankstown City, Campbelltown City, Fairfield City, Hurstville City, Kogarah City, Liverpool City, Rockdale City, Sutherland Shire and Wollondilly Shire.



The CRA represents Local Government in the Cooks River Catchment of NSW. Member Councils include Ashfield Municipal, Bankstown City, Canterbury City, Hurstville City, Marrickville, Rockdale City, Strathfield Municipal and City of Sydney.

The River Health Monitoring Program is being undertaken in association with the Georges River Environmental Education Centre, Sydney Water Corporation, Sydney Metropolitan 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 A.Hanlon, ©GRCCC 2011 - 2012 River Health Georges and Cooks Rivers Report Card.





OVERALL RIVER HEALTH

Results from 2011/12 River Health monitoring show a slight improvement to the overall grade for the Georges River catchment however the ecological condition remained "Fair".

Inaugural monitoring of the Cooks River showed the overall ecological condition of the catchment was "Poor".

Due to high rainfall over the past year, creeks on the urban fringe of the Georges River catchment were subject to consistent flows which have been absent

in previous years. As a result improved water quality and a rebound of macroinvertebrate communities were recorded in these streams.

In contrast, degraded water quality and macroinvertebrate communities dominated by pollution tolerant species were recorded in the highly urbanised areas of the Georges and Cooks River catchments. This result highlights the severity of impacts to urban streams caused by runoff, stormwater influx, erosion and degraded riparian vegetation zones.

B
C+ **OVERALL SCORE GEORGES RIVER**

D **OVERALL SCORE COOKS RIVER**

UPPER GEORGES RIVER

A
A- **Upper Georges River**

14 FRESHWATER SITES
OVERALL SUMMARY

MID GEORGES RIVER

D+
C **Mid Georges River**

13 FRESHWATER SITES
OVERALL SUMMARY

LOWER GEORGES RIVER

C
C **Lower Georges River**

7 FRESHWATER SITES
OVERALL SUMMARY

COOKS RIVER

D-
E- **Cooks River**

9 FRESHWATER SITES
OVERALL SUMMARY

GEORGES RIVER ESTUARY

B
B **Georges River Estuary**

14 ESTUARY SITES
OVERALL SUMMARY

COOKS RIVER ESTUARY

C+
C+ **Cooks River Estuary**

2 ESTUARY SITES
OVERALL SUMMARY

URBAN
BUSHLAND
WATER