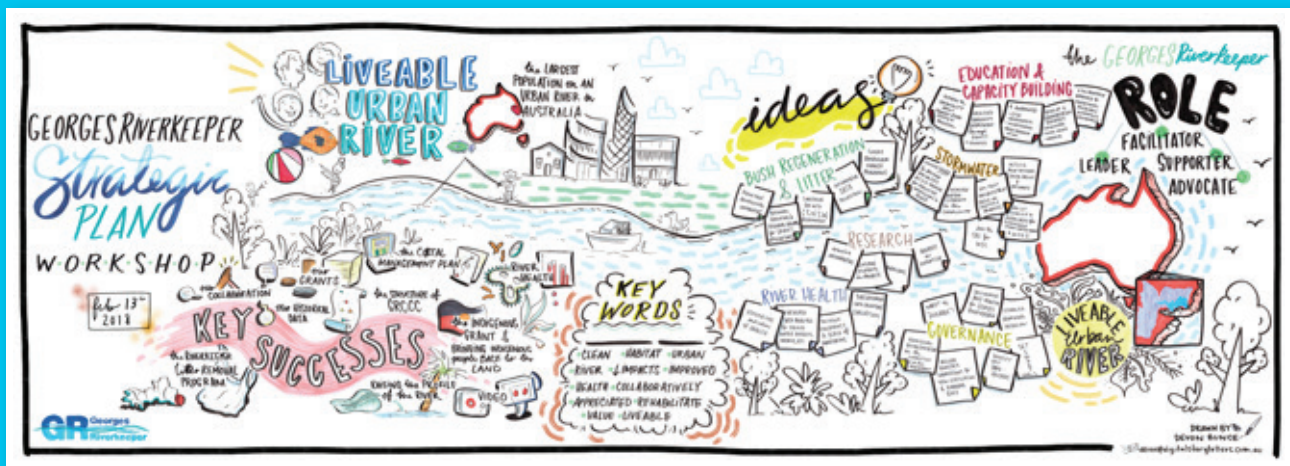













STRATEGIC PLAN 2018-2022



CONTENTS

Regional Context, Aboriginal Heritage	1
Urbanisation of the catchment	2-3
Georges Riverkeeper – Our Role, Aspirational goal and member and stakeholders	4
Strategic Programs	5
 Catchment Actions Program	6
 Catchment Actions Program Logic	7
 River Health Monitoring Program	8
 River Health Monitoring Program Logic	9
 Stormwater Program	10
 Stormwater Program Logic	11
 Research Program	12
 Research Program Logic	13
 Education & Capacity Building Program	14
 Education & Capacity Building Program Logic	15
Reporting and Monitoring, Evaluation, Reporting and Improvement	16

ACKNOWLEDGEMENT OF COUNTRY:

Georges Riverkeeper acknowledges the Traditional Owners and Custodians of the Georges River, the Kamegal, Bedigal, Cabrogal, Cannemegal, Gweagal and Norongerral people of the Eora, Dharug and Dharawal nations and we pay our respects to their Elders past, present and future.

CHAIRPERSON'S FOREWORD

Georges Riverkeeper is leading the way in urban waterway management. This is in recognition that the Georges River catchment is the second most populated in NSW, which in itself poses complex and evolving challenges. This Strategic Plan has been developed to provide direction for the management of our catchment over the next four years. Over that period, we will witness increasing urban development across Sydney and we will seek to constantly improve management to protect the Georges River in the face of this development. As a group, our Member Councils have contributed ideas and initiatives, which have been integrated to strategically provide clear direction and objectives. This has been complimented by the introduction of annual workplans, which will measure our progress towards implementing management to achieve a liveable urban river. I would like to thank our Member Councils, their Councillors and their staff for their assistance in the development of this Georges Riverkeeper Strategic Plan.

Peter Scaysbrook, Chairperson

PROGRAM MANAGER'S FOREWORD

Georges Riverkeeper is one of Australia's longest surviving catchment management groups, started in 1979. Being made up of volunteers in its inception, the Georges Riverkeeper is constantly evolving and adapting to new challenges and this Strategic Plan is part of that evolution. This Strategic Plan specifically recognises that urbanisation is the major challenge for the Georges River, as with urbanisation comes polluted stormwater runoff, which is by far the biggest contributor of contaminants into the river. Backed by Annual Workplans, incorporation of a stormwater focus into the Strategic Plan addresses the risk posed by stormwater and provides direction and focus for the strategic use of resources. I am looking forward to working with our member councils to implement this plan over the next four years to make the Georges River a liveable urban river.

Beth Salt, Program Manager

THE 4-YEAR STRATEGIC PLAN, 2018-2022

The Strategic Plan sets out the direction that the Georges Riverkeeper will take over the four year period (2018-2022). Georges Riverkeeper facilitates proactive waterway management that is adaptive and integrated across other areas of member councils, rather than being reactive and piecemeal. There are five focus areas in the Strategic Plan which are:

- Catchment Actions Program, previously the Riverkeeper Program
- River Health Monitoring Program
- Stormwater Program
- Research Program
- Education & Capacity Building Program

Detail of activities required to address the objectives of the Strategic Plan will be detailed in Annual Workplans, which will be created leading into each financial year, in consultation with the Georges Riverkeeper Committee. Annual Workplans are further discussed towards the end of this document.

The Strategic Plan has been written to be implemented alongside other relevant documents related to the management of the Georges River, for example the Coastal Zone Management Plan. This document is not intended to override waterway management plans of member councils or other relevant documents.

**GEORGES RIVERKEEPER'S
ASPIRATION GOAL:
BEST PRACTICE ENVIRONMENTAL
MANAGEMENT FOR A LIVEABLE
URBAN RIVER.**

REGIONAL CONTEXT

The Georges River catchment stretches from Botany Bay on the east coast of New South Wales west towards Prospect Reservoir and south into bushland around Campbelltown and Appin. The northern and western parts of the Georges River catchment are dominated by the expanses of Sydney's urban sprawl, with natural areas and national parks taking up much of the upper catchment to the south. The total length of the Georges River is around 100 km, with the tidal limit delineated by Liverpool Weir. The water is fresh above the weir and then increasingly saline as the river approaches Botany Bay.

The lower Georges River was first surveyed by Cook in 1770. Since then there have been major morphological changes, notably in the upper reaches of the estuary, where extensive dredging and reclamation has occurred over the past 60-70 years.

Today, the Georges River catchment is home to almost 1.4 million people, which is projected to increase to almost 1.7 million by 2031. The impacts from this large and growing human population in the catchment include habitat loss through urban encroachment, stormwater management issues and erosion, invasion by pest animals and weeds, litter and pollution.

ABORIGINAL HERITAGE

Aboriginal people have occupied the continent for over 40,000 years and it is through the Dreaming that Aboriginal people mark the beginning of time when the Rainbow Serpent moved across the land and created the rivers as it travelled. Biame, the sky spirit, helped shape a barren and featureless world and gave the Aboriginal people the laws to guide their interactions with each other and their environment.

Over thousands of years Aboriginal people have inhabited the Sydney region, where they formed family clans within broader nations. Boundaries

between nations were often prominent geographic features, such as mountains or rivers, and the Georges River formed one such boundary. To the north of the river were the people who spoke the Dharug language, which included the Kameygal (Botany Bay), Bediagal (Hurstville/Bankstown), Cabrogal (Cabramatta) and the Cannemegal (Prospect and Fairfield). To the south of the river were the people who spoke the Dharawal language, which included the Gweagal (Kurnell) and the Norongerragal (Menai/Holsworthy).

It was the Kameygal clan that in 1770 made first contact with Lieutenant James Cook and the Endeavour on the foreshores of Botany Bay near the mouth of the Georges River. Eighteen years after that first encounter, the British Navy returned to colonise Australia. For the local Aboriginal people this became a period of dislocation and conflict. In the 19th century, Aboriginal people were obliged to live in missions. There were three main missions on the Georges River and Botany Bay at La Perouse, Sans Souci (on Kogarah Bay) and Peakhurst (Salt Pan Creek).

Aboriginal culture lives on in the Georges River. Middens, scar trees, groove marks, engravings and hand stencils are spread widely across the suburbs within the Georges River catchment. Today, the Georges River has one of the largest populations of Aboriginal people in Australia.

URBANISATION OF THE GEORGES RIVER CATCHMENT

The Georges River has experienced significant changes since European settlement. European settlement of the area was initially delayed when the location for initial establishment of the colony was moved from Botany Bay to Sydney Cove, owing to a lack of supply of reliable fresh water. But, the colony expanded, initially along rivers around Sydney and European settlement along the Georges River accelerated from the 1830s, almost 200 years ago. The upstream limit of the estuary, the National Trust listed Liverpool Weir, is located approximately 46 km from the mouth of the river and was constructed by convict labour 175 years ago to supply water to the growing township of Liverpool. As a result the estuary now has a clearly delineated upstream limit.



The following issues with urbanisation have been noted.

Deforestation - With urbanisation comes a replacement of our bushland with infrastructure to support the growing population living in the area. Deforestation is an unfortunate side effect of urbanisation, replacing forests with built hard surfaces which detrimentally affects the quantity and quality of water entering the Georges River. Deforestation results in habitat loss, which decreases habitat availability for the local flora and fauna, including iconic species like koalas.

Stormwater - The Georges River estuary and its freshwater tributaries receive runoff from an intensively urbanised and industrialised catchment. Controls on industrial discharge of pollutants have improved since the 1970s. But, the estuary has been a major repository for urban and industrial waste, including metalliferous loadings (eg. copper, zinc, nickel, lead). Waste dumps and sewerage overflows also continue to contribute to high pollutant loading into the waterways.

Water Quality and Quantity - From the mouth of the Georges River at Botany Bay to the Como Bridge has good tidal exchange, therefore pollutants entering the estuary within this reach are comparatively well diluted and dispersed with incoming ocean waters. The degree of tidal exchange then reduces significantly with distance upstream even though the freshwater inflows are relatively small, the upper reaches of the estuary remain strongly influenced by the catchment inflows, as indicated by the suppressed salinity concentrations. In addition to the natural flushing and dispersion characteristics of the estuary as described above, the water quality of the Georges River and its freshwater tributaries has been affected notably by a range of anthropogenic factors. It has been estimated that 95% of the total contaminant load to the Georges River and Botany Bay estuary is now derived from stormwater runoff, so the recent focus on stormwater management is considered appropriate.

Flooding - Development over the past 40 years has modified flood risks along the Georges River. Although Councils have been diligent in preventing development on the floodplain, there is continual pressure for rezoning, development just above Council's floodplain planning level, and intensification of existing development through dual occupancies.

Sandmining and Dredging - Uncontrolled sand extraction throughout the mid-twentieth century in the upper reaches of the estuary has dramatically changed the river morphology. Implications of this have been dire for the estuary, with reduced tidal flushing, accelerated bank erosion, and water pollution. Meanwhile, sediments in the estuary remain affected from a long history of commercial activities and on-going urban runoff.

Coal Mining - Coal mining occurs in the upper Georges River catchment within Campbelltown City Council and Wollondilly Shire Council Local Government Areas. The River Health monitoring data shows that whilst mining is associated with localised impacts to the Georges River, the impacts are less severe and far less widespread than the effects of urbanisation.

Environmental Values - Despite the notable historical impacts and stressors, the Georges River has managed to maintain significant environmental value. Large sections of the catchment to the south remain forested, while a diversity of habitats and species can still be found across the catchment, including many Endangered Ecological Communities. Georges River catchment is home to:

- 454 species of fauna (both aquatic and terrestrial) including several iconic species such as: koalas, platypus, flying-foxes, swamp wallabies, and grey kangaroos. There are also many important recreational fishing species, such as Yellow Fin Bream, Dusky Flathead, Mulloway, Whiting, Mullet, Blue Swimmer Crabs and Mud Crabs.
- 30 riparian vegetation communities
- 29 Endangered Ecological Communities including 23 ha of Estuarine Reedlands, 470 ha of Mangrove Forests, 145 ha of Estuarine Saltmarsh and 126 ha of Estuarine Swamp Oak Forest.
- 375 ha of seagrass beds that include *Posidonia australis*, which is an Endangered Ecological Population



Human Values: Ecosystem Services - Ecosystems services are the benefits that humans freely obtain from the natural environment. The many and varied benefits are of fundamental importance to human well-being, health, livelihoods, and survival. It is estimated that the Georges River provides over \$2 billion of ecosystem services each year.

Oysters - A specific ecosystem service that has been all but lost from the Georges River is commercial oyster production. In 1992 the lower Georges River estuary supported the State's second most productive oyster growing area with 95 leases that each year produced approximately 18,000 bags of Sydney Rock Oyster valued at over \$3.5 million. However the Georges River oyster industry suffered major losses in the mid-1990s from QX Oyster disease which attacked Sydney Rock Oysters. In the aftermath of QX disease the Pacific Oyster was introduced as a commercial species but in 2010 Pacific Oyster Mortality Syndrome affected large areas of oyster leases. Today the once thriving Georges River oyster industry has been reduced to only two oyster leases operating out of Woollooware Bay.

Liveability - Liveability is the sum of the factors that add up to a community's quality of life, including the built and natural environments, health, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment and recreation possibilities. The community values the Georges River primarily for its environmental services, and also its recreational potential. Primary contact activities are desirable, while the community considers that ecological conditions should be maintained at a high conservation level (but recognising that some areas are also moderately to highly disturbed).

GEORGES RIVERKEEPER - OUR ROLE

Georges Riverkeeper is the business name of the Georges River Combined Councils' Committee Incorporated (GRCCC), formed in 1979 by councils with a collective responsibility for the health of the Georges River to work together to improve its environmental condition and ongoing management.

Georges Riverkeeper aims to coordinate natural resource management on a catchment basis to achieve greater efficiencies and effectiveness.

Georges Riverkeeper is an entity registered as an Incorporated Association under the Association's Incorporation Act 2009, with reporting responsibilities to the NSW Department of Fair Trading. Georges Riverkeeper operates as a not-for-profit organisation with its own Constitution. The officer bearers of the organisation make up the Executive Group.

OUR ASPIRATIONAL GOAL

The Georges Riverkeeper aspirational goal, which incorporates our vision and mission, is: 'Best practice environmental management for a liveable urban river'.



OUR MEMBERS AND OTHER STAKEHOLDERS

The eight member councils – Bayside Council, Campbelltown City Council, City of Canterbury Bankstown, Fairfield City Council, Georges River Council, Liverpool City Council, Sutherland and Wollondilly Shire Councils – of the Georges River catchment make up the Georges Riverkeeper.

Georges Riverkeeper stakeholders, who may be represented on the Committee, include but are not limited to:

- Corrective Services NSW
- Environmental Education Centre (Georges River and Botany Bay)
- Greater Sydney Local Land Services
- Lands and Water – Crown Lands
- Local Aboriginal Land Councils
- National Parks and Wildlife Service
- NSW Department of Land and Property Information
- NSW Department of Planning and Environment
- NSW Department of Primary Industry
- NSW Office of Environment and Heritage
- NSW Roads and Maritime Service
- NSW State Emergency Service
- Sydney Water Corporation
- Various environmentally focussed community groups and other regional organisations

STRATEGIC PROGRAMS

The aspirational goal of the Georges Riverkeeper is best practice environmental management for a liveable urban river. The strategic Programs encompass activities that will allow Georges Riverkeeper to work towards meeting this aspirational goal, with member councils and our other partners.

Five focus areas were identified through a stakeholder engagement process undertaken in the development of this strategy and are represented by the five programs, which are:

-  Catchment Actions Program
-  River Health Monitoring Program
-  Stormwater Program
-  Research Program
-  Education & Capacity Building Program

Although these are distinct Programs they are integrated and work together to protect the health of the Georges River.

Each Program is further explored below, specifically:

- The challenge
- What has been done by Georges Riverkeeper in the past?
- Our goal for the future
- How will we achieve our goal?

When discussing how the goal will be achieved, the role of Georges Riverkeeper is laid out for each Program. The role of Georges Riverkeeper is defined within the terms of:

- **Leader:** lead on identified actions
- **Facilitator:** Facilitate other in implementing actions
- **Supporter:** support others to implement actions
- **Partner:** working with stakeholders to achieve identified actions
- **Advocate:** provide strong leadership for key actions

There are a few key points that were identified during the development of the strategy as important to include in the strategy but did not warrant an individual Program and are integrated into each of the five Programs:

- Georges Riverkeeper has a role to advocate on behalf of the river
- the governance structure of the Georges Riverkeeper, and
- Aboriginal representation and advisement into the Programs.

Following this, a Program logic has been developed for each Program with a corresponding monitoring, evaluation, reporting and improvement plan (MERI). The timeframes for the Program logic are outlined below.

- Aspirational Goal: 20+ years
- Long Term Goal: 10 – 20 years
- Intermediate Outcomes: 5 – 10 years
- Outputs/Activities: within 4 years, during the life of the Strategic Plan



CATCHMENT ACTIONS PROGRAM



The Challenge

Litter pollution is constantly washed into our tributaries, river, estuary, bay and can make its way to the ocean. Gross pollutants reduce the recreational amenity and aesthetic value of the environment thus reducing public enjoyment and urban liveability while increasing negative environmental impacts. Plastic in the environment does not biodegrade, rather it photodegrades and breaks down into microplastics and remains plastic. Other microplastics enter the litter stream through wear (eg. tyre dust and clothing microfibres) and poor industrial housekeeping (eg. nurdles, small plastic pellets used to make plastic products). Microplastics accumulate in sediments such as the sand on beaches and benthic sediments. Plastics that enter waterways adsorb other pollutants on their surface, so if ingested by marine animals, not only the plastic enters the food web, but also the associated adsorbed pollutants.

It is estimated that 45% of the Georges River catchment is in natural condition, while the remaining 55% is urbanised. River Health Report Cards show that across urbanised areas in the Georges River catchment, most riparian vegetation is highly degraded and in Poor condition. Fragmentation, edge effects and nutrient inputs from stormwater foster loss of native vegetation and promote growth of weeds. A majority of ecological communities within the catchment are endangered or vulnerable. The loss and degradation of remnant bushland results in the reduction of vital ecosystem service functions such as: clean air and water, climate regulation, carbon sequestration, soil formation and retention, pollination, biodiversity, wildlife habitat and public amenity.



What has been done by Georges Riverkeeper in the past?

The Catchment Actions Program (CAP) coordinates and utilises Corrective Services NSW as a resource for litter removal. Bush regeneration has been primarily grant fund dependent.

Our goal for the future

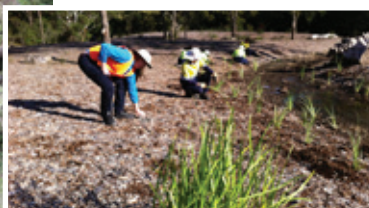
Protecting and improving the amenity, aesthetics, biodiversity and ecosystem functions of the Georges River is a key goal which can be addressed by the CAP. By committing to improve the amenity, aesthetics and functions of the Georges River, we are placing importance on the liveability of the river.

How will we achieve our goal?

The strength of Georges Riverkeeper is a holistic catchment approach to natural resource management that fosters regional outcomes. Georges Riverkeeper facilitates proactive waterway management that is adaptive and integrated across other areas of council, rather than being reactive and piecemeal.

The Roles of Georges Riverkeeper for implementing the Catchment Actions Program











- **Leader:** Georges Riverkeeper will lead the removal of litter from around waterways of the Georges River catchment.
- **Supporter:** Georges Riverkeeper will support Council bushland management plans and support Council Bushcare Programs and natural resource management initiatives.
- **Partner:** Georges Riverkeeper will partner with:
 - Corrective Services NSW in the delivery of on-ground litter removal,
 - Councils and other relevant stakeholders to apply for grant funding to deliver bush rehabilitation works.
- **Advocate:** Georges Riverkeeper will advocate for issues where the intended outcome is reduced litter and/or improved natural resource management.



VERKEEPER

CATCHMENT ACTIONS PROGRAM LOGIC

ASPIRATIONAL GOAL: Best practice environmental management for a liveable urban river

LONG TERM GOAL	<ul style="list-style-type: none"> • Protect the aesthetics and biodiversity of the Georges River 	
	LITTER <ul style="list-style-type: none"> • Reducing the volume of litter within the river system 	BUSH REGENERATION <ul style="list-style-type: none"> • Protecting and enhancing natural area ecosystems, native vegetation and biodiversity
INTERMEDIATE OUTCOMES	<ul style="list-style-type: none"> • A cleaner catchment through reduced litter 	<ul style="list-style-type: none"> • Protect, expand and improve degraded ecological communities • Conserve and improve biodiversity of fragmented bushland and corridors.
OUTPUTS	<ul style="list-style-type: none"> • State of the River Report – biennial     • Program statistics – quarterly and annually • Contribute to sub-catchment plans    	
	<ul style="list-style-type: none"> • Active worksites that are WHS approved by corrective services • Litter removed from litter stream 	<ul style="list-style-type: none"> • Bush rehabilitation, regeneration and revegetation of native ecosystems across the catchment • Mitigation of erosion.
ACTIVITIES	<ul style="list-style-type: none"> • Advocacy and education for the river  • Catchment conference  • Annual approval of worksites with CS NSW • Rubbish collection at corrective services approved sites • Advocating for regulation, compliance and reduction in litter • Clean Up Australia Day 	<ul style="list-style-type: none"> • Advocate for natural resource management in partnerships • Opportunistic clean ups with bushcare and partnership volunteers  • Grant driven bush-regeneration Program • Maintain Aboriginal connections

GEORGES R

RIVER HEALTH MONITORING PROGRAM



The Challenge

A vital component of an adaptive management framework is informing efficient and effective use of management resources directed towards waterway improvement, by ongoing monitoring of the health of the river. Ongoing monitoring of appropriate and scientifically robust indicators is required to identify: the types and scale of detrimental impacts; locations where conditions are notably improving or declining over time with 'business as usual' management; 'hotspot' locations requiring prioritised management actions; and, determining whether management actions are successful.

What has been done by Georges Riverkeeper in the past?

The River Health Monitoring Program applies scientifically rigorous methods to the assessment of freshwater tributaries and estuarine sections of the Georges River. The Program reports on the riparian vegetation, water quality and freshwater macroinvertebrates in freshwater reaches; and water quality in the estuary. Within past Report Cards, complex ecological data has been simplified into grades to facilitate a shared understanding about the ecological condition of waterways across stakeholders, whilst greater detail about waterway condition has been provided to member councils within technical reports.

In 2017, the River Health Monitoring Program initiated the creation of a rapid visual assessment tool to be used within the Georges River catchment. This reach-scale tool allows for many assessments to be completed, as it is a rapid process (i.e. less than 30 minutes per site) and includes more specific detail about issues of management concern to inform allocation of natural management resources by councils for multiple outcomes along the river. In addition to indicators of ecological condition, it also includes indicators of liveability.

Our goal for the future

The River Health Monitoring Program strives to act as a secure custodian of Georges River environmental data that is useful for informing best practice waterway management by member councils and diverse stakeholders about the condition of waterways. The strategic collection of data and practical application of the knowledge gained from the data is essential to becoming a best practice urban waterway monitoring Program. The Program aims to collect data that enables quantification of both values and threats to waterways in the Georges River catchment.

How will we achieve our goal?














River Health Monitoring resources will be directed towards monitoring what most effectively informs multiple stakeholders involved in urban waterway management.

The role of Georges Riverkeeper for implementing the River Health Monitoring Program

- **Leader:** Georges Riverkeeper will lead the collection and analyses of waterway monitoring data across the Georges River catchment.
- **Facilitator:** Georges Riverkeeper will report data in accessible formats, depending upon audience, to facilitate stakeholders reaching a shared understanding of current conditions and effective management solutions for waterways in the Georges River catchment.
- **Supporter:** Georges Riverkeeper will provide monitoring data to support member councils in effective and efficient allocation of resources to achieve best practice waterway management.
- **Partner:** Georges Riverkeeper will partner with councils and other stakeholders to identify and address knowledge gaps that act to hinder implementation of best practice management of waterways in the Georges River catchment.
- **Advocate:** Georges Riverkeeper will use up-to-date monitoring data to inform advocacy to protect and enhance liveability of waterways in the Georges River catchment.



RIVER HEALTH MONITORING PROGRAM LOGIC

ASPIRATIONAL GOAL: Best practice environmental management for a liveable urban river	
LONG TERM GOAL	<ul style="list-style-type: none"> • Act as a secure custodian of Georges River environmental data • Become recognised as a best practice urban waterway monitoring Program
INTERMEDIATE OUTCOMES	<ul style="list-style-type: none"> • Provide data that informs effective urban waterway management • Protect, expand and improve degraded ecological communities • Conserve and improve biodiversity of fragmented bushland and corridors
OUTPUTS	<ul style="list-style-type: none"> • State of the River Report – biennial     • Sub-catchment management plans    • Evidence-based advocacy to local, state and federal government
ACTIVITIES	<ul style="list-style-type: none"> • Traditional River Health seasonal monitoring freshwater in Spring and Autumn (biennial) • Estuary monitoring – annual, in warmer months from October to March • Site audits: rapid visual assessment tool • Citizen Science monitoring  • School monitoring – adopt a stream  • Catchment Conference     • Monitoring the progress of environmental plans and outcomes (eg. CZMP) • Internship Program

STORMWATER PROGRAM



The Challenge

Urbanisation is the major land use presently influencing the condition of waterways managed by member councils across the Georges River catchment. More specifically, it is estimated that 95% of the total contaminant load to the Georges River/Botany Bay estuary is now derived from stormwater runoff. The Greater Sydney Commission's District Plans show that the intensity of urbanisation in the Georges River catchment is earmarked to increase to accommodate Sydney's growing human population, with an increase in high density dwellings. Research in the Georges River catchment has shown that ecological degradation occurs in association with the increased catchment imperviousness that occurs in urban areas, and we know that with traditional design of urban landscapes stormwater detrimentally affects receiving waterways. Stormwater picks up contaminants as it flows over rooftops, roads and paths, plus can trigger overflows of sewage by overwhelming existing sewerage systems.

What has been done by Georges Riverkeeper in the past?

In the past, addressing stormwater as an issue was not a specific objective of Georges Riverkeeper. Disseminating information and sharing knowledge of Water Sensitive Urban Design (WSUD) principles between member councils was a component of the grant-funded Upper, Mid, and Lower Georges River Sustainability Initiatives (2009-2012). More recently the Georges Riverkeeper have teamed up with the other catchment groups in Sydney to run "Get the Site Right" campaigns. Get the Site Right is a joint education and enforcement Program that focuses on keeping sediment on building sites and out of stormwater by ensuring the proper erosion and sediment controls are in place to protect our waterways.

Our goal for the future

Our goal is to have a marked impact on the quality and quantity of stormwater entering the Georges River and improve stormwater management towards regulatory best management practice standards. Increasing community knowledge and awareness around stormwater is key for the success of our goal.

How will we achieve our goal?

Georges Riverkeeper will be an active member of the stormwater industry and ensure that member councils and other stakeholders are aware of the best management practice standards that should be implemented for a healthy, liveable urban river. Further capacity building with Council staff and Councillors, building on the Sustainability Initiatives from the past, is also key to ensure staff are trained and up to date on current best practice stormwater management.









The role of Georges Riverkeeper for implementing the Stormwater Program

- **Leader:** Georges Riverkeeper will:
 - lead capacity building of council staff and Councillors in WSUD, and
 - increase the water literacy of the community.
- **Facilitator:** Georges Riverkeeper will facilitate the coordination of any grants for stormwater when available.
- **Supporter:** Georges Riverkeeper will support councils in implementing best practice stormwater management to ensure that sustainable urban water management is embedded into planning and council activities and share lessons learnt.
- **Partner:** Georges Riverkeeper will identify and partner with appropriate stakeholders to help councils deliver best practice stormwater management.
- **Advocate:** Georges Riverkeeper will advocate for the river in stormwater issues and innovative planning regulation and new technologies for water quality improvements.



STORMWATER PROGRAM LOGIC

ASPIRATIONAL GOAL: Best practice environmental management for a liveable urban river

LONG TERM GOAL	<ul style="list-style-type: none"> • Contribute to State and National stormwater policy – National Policy and Regulatory Framework • On-ground works – input into Council projects to incorporate IWCM/WSUD
INTERMEDIATE OUTCOMES	<ul style="list-style-type: none"> • Improve stormwater management towards regulatory and best management practice standards so as to improve the quality and quantity entering the Georges River
OUTPUTS	<ul style="list-style-type: none"> • Inform Council, State and Federal policies for best practice stormwater, flood and coastal management • Contribute to sub-catchment management plans  • Better Erosion and Sediment Control (ESC) compliance on construction sites • Better ESC enforcement by council through education and improved culture 
ACTIVITIES	<ul style="list-style-type: none"> • Work and share information with industry partners and member councils • Catchment Conference – member councils     • Ensure erosion and sediment control measures are being adhered to on construction sites within the Georges River Catchment (eg. Get the Site Right Campaign)  • Advocate for implementation of best practice stormwater management legislation and planning instruments across all levels of government • Capacity building with councils (eg. Healthy Waterways Workshop – breaking down barriers)  • Work with OEH to convert the Georges River Estuary from a CZMP to a CMP and work with Councils to implement the Georges River Estuary CMP • Participate in the Georges Riverkeeper Floodplain Sub-Committee with council representatives

RESEARCH PROGRAM



The Challenge

The major land use that detrimentally affects the condition of waterways across the catchment is urbanisation, which occurs on land managed by member councils. Urbanisation is associated with multiple issues which detract from the liveability of waterways, including altered flow, reduced water quality, degraded riparian zones (ie. less native vegetation and increased weeds), increased erosion, lost aquatic habitat, reduced biodiversity, diminished amenity and lost recreational opportunities.

There are still many gaps in our knowledge about the effects of urbanisation on complex aquatic ecosystems, such as how best to mitigate the impacts, the features that will define liveable urban rivers in the future and how to overcome the multifaceted barriers presently acting to hinder progress towards making liveable urban rivers. Best practice management is adaptive and requires keeping abreast of research developments and contributing research focused on the local issues relevant to the natural resource management of councils. Another problem hindering effective waterway management is the historic limited communication between policy-makers, managers and researchers. Georges Riverkeeper occupies a unique position at the nexus of policy, management and research.

What has been done by Georges Riverkeeper in the past?

In the past, Georges Riverkeeper did not have a dedicated Research Program, but sporadically produced research that is published within the scientific literature and/or presented at scientific conferences. Georges Riverkeeper has continued to receive support and has co-authored research with academics at Western Sydney University.

Our goal for the future

The Research Program aims to produce research to aid evidence-based best practice management of urban waterways, to become known as a key holder of scientific knowledge for the Georges River and increase links between policy, management and research.

How will we achieve our goal?



The Research Program will identify major knowledge gaps that presently hinder the implementation of best practice waterway management in the Georges River catchment. Through the Program, Georges Riverkeeper will partner with research institutions to conduct research to address the identified gaps and guide the development of policies and management by member councils. Research will be published and/or presented at state and national conferences to contribute knowledge and become recognised as key scientific knowledge holders.

The role of Georges Riverkeeper for implementing the Research Program

- **Leader:** Georges Riverkeeper will lead the identification of major knowledge gaps requiring research that hinder implementation of best practice waterway management in the Georges River catchment.
- **Facilitator:** Georges Riverkeeper will communicate with stakeholders to facilitate using research to inform waterway management policies and actions across the Georges River catchment.
- **Supporter:** Georges Riverkeeper will provide advice, supervision, data and/or resources (eg. travel in boat, where appropriate) to support the establishment of research projects in the Georges River catchment.
- **Partner:** Georges Riverkeeper will partner with universities, other research organisations and NSW Government to apply for research grants and foster increased research in the Georges River catchment.
- **Advocate:** Georges Riverkeeper will use the results of research to inform evidence-based advocacy aimed at achieving best practice management for a liveable urban river.



RESEARCH PROGRAM LOGIC

ASPIRATIONAL GOAL: Best practice environmental management for a liveable urban river	
LONG TERM GOAL	<ul style="list-style-type: none"> • Maintain research partnerships to increased links between science (research), management and policy • Evidence-based waterway and catchment management • Establish clear goals (expectation) of best outcomes for urban waterways
INTERMEDIATE OUTCOMES	<ul style="list-style-type: none"> • Strengthen productive partnerships with academia and higher level government • Increase focus on urban river research (using the Georges River as a model)
OUTPUTS	<ul style="list-style-type: none"> • Publications • Conference presentations / attendance • Factsheets  • Policies and management actions informed by research • Case studies of waterway management projects • Knowledge gap identification
ACTIVITIES	<ul style="list-style-type: none"> • Project-based research (ie. before-after monitoring of waterway management council projects) • Surveys – across environmental gradients • Manipulative scientific experiments • Literature review  • Collaboration with other urban waterway researchers • Co-supervision of post graduate students on Georges River projects • Participate on expert panels for urban waterway management

GEORGES R

EDUCATION & CAPACITY BUILDING PROGRAM



The Challenge

To achieve best practice management, Georges Riverkeeper needs to engage with a broad range of stakeholders who presently lack a shared understanding about the main issues (both values and threats) affecting liveability of waterways across the catchment or how to effectively manage those issues. There are over 1.4 million residents living in the Georges River catchment, with the potential for each individual to carelessly increase impacts on waterways or appreciate the multiple values of well managed waterways and actively engage in reducing their impacts. Across member councils, major contributors to differences in the capacity to implement best practice waterway management are likely inter-council differences in governance, resources, knowledge, and practices.

What has been done by Georges Riverkeeper in the past?

Education and Capacity Building has not existed as an explicit Program of Georges Riverkeeper in the past, although there was a grant-funded Community Engagement position from 2009 – 2013. In the same period, a major objective of the River Health Monitoring Program was community engagement, via involving the general public and school students in monitoring. Since then, ad-hoc education and community engagement have continued through social media, website, presentations (schools, community groups and retirees), attendance at festivals and occasional monitoring events. There has been some past grant-funded effort to build capacity towards best practice waterway management across councils in the Georges River catchment.

Our goal for the future

Develop and disseminate education materials to foster a shared understanding of issues and solutions for best practice management of urban waterways. Georges Riverkeeper would like to facilitate the increase in capacity of member councils to implement best practice waterway management.

How will we achieve our goal?

Present educational activities will continue and be given formal recognition within the Education and Capacity Building Program. These activities will be improved (eg. updated website) and supplemented by the development of additional education materials (eg. fact sheets), plus the strengthening of partnerships with universities and Environmental Education Centres. The other Georges Riverkeeper Programs will be used to inform the development of capacity building to assist member councils to achieve best practice waterway management. A main component of this Program is educating council staff and Councillors on how to achieve a liveable urban river by using the water sensitive cities and water sensitive urban design principles. Providing resources to improve communication and collaboration between departments within councils to achieve multiple benefits and better management outcomes of their natural assets is a goal for this Program.

The role of Georges Riverkeeper for implementing the Education & Capacity Building Program












- **Leader:** Georges Riverkeeper will lead the development of materials to educate a range of audiences about the values and threats for waterways in the Georges River catchment.
- **Facilitator:** Georges Riverkeeper will facilitate regular events to increase the capacity of member councils to implement best practice waterway management across departments.
- **Supporter:** Georges Riverkeeper will support groups wishing to disseminate information aimed at reaching a shared understanding of waterway management issues and solutions across stakeholder groups in the Georges River catchment.
- **Partner:** Georges Riverkeeper will partner with schools and environmental educators to increase inter-generational awareness of the values of waterways across the Georges River catchment.
- **Advocate:** Georges Riverkeeper will use a range of educational materials to advocate for a liveable urban river.



VERKEEPEER

EDUCATION & CAPACITY BUILDING PROGRAM LOGIC

ASPIRATIONAL GOAL: Best practice environmental management for a liveable urban river

	COMMUNITY	SCHOOLS & UNIVERSITIES	COUNCILS
LONG TERM GOAL	<ul style="list-style-type: none"> Support the community in understanding standards for a liveable urban river 	<ul style="list-style-type: none"> Inter-generational awareness of the value of natural areas and liveable urban rivers 	<ul style="list-style-type: none"> Common acceptance and integration of best practice environmental management across council plans and policies for a liveable urban river
INTERMEDIATE OUTCOMES	<ul style="list-style-type: none"> Attitudes and behavioural change to achieve a liveable urban river The community values the natural areas along the river 	<ul style="list-style-type: none"> Strengthen partnerships with universities, academics, and environmental educators  Educators implementing the Georges Riverkeeper urban river education modules Students are educated about the value of natural areas and liveable urban rivers 	<ul style="list-style-type: none"> Implementation of best practice environmental and urban river management
OUTPUTS	<ul style="list-style-type: none"> Increased community knowledge, connection and action with the river and local environment Improved community understanding of what is required and what is being done to achieve a liveable urban river 	<ul style="list-style-type: none"> Upskilling university students and gaining resource efficiency in labour intensive water quality monitoring  Strengthening partnerships with university  Identification of interested students for Research Program  	<ul style="list-style-type: none"> Increased knowledge and ability of council staff regarding urban river management Improve communication between councils
	<ul style="list-style-type: none"> Aid educators to deliver modules Modules and resources developed 		
	<ul style="list-style-type: none"> State of the River Report     		
ACTIVITIES	<ul style="list-style-type: none"> Targeted community education (ie. festivals, presentations) Education tools – customised and generic (fact sheets, website, maps, social media, events) Survey community to define a 'liveable Georges River' 	<ul style="list-style-type: none"> Develop and coordinate a university internship Program  Develop partnerships with Environmental Education Centres (EECs) and schools 	<ul style="list-style-type: none"> Capacity building of council staff to aid councils in managing a liveable urban river (eg. catchment conference)  
	<ul style="list-style-type: none"> Citizen Science – Depth studies (NSW Government Education Curriculum) 	<ul style="list-style-type: none"> Develop and share urban river education modules/resources in consultation with relevant stakeholders 	

REPORTING

Georges Riverkeeper will report on its Programs in several different ways; for example in reports, factsheets, social media, content on our website and publications, to name a few. However, the main reporting to track progress towards meeting goals of this Strategic Plan will be the Annual Report which will reflect the activities in the Annual Workplan. Workplans will be developed in conjunction with the annual budget at the beginning of each financial year.



MONITORING, EVALUATION, REPORTING AND IMPROVEMENT

As part of the Georges Riverkeeper Strategic Plan we have developed a Monitoring, Evaluation, Reporting, and Improvement (MERI) framework, allowing us to continually improve our Programs throughout the duration of the Strategic Plan.

Georges Riverkeeper will accomplish this by:

- **Monitoring** - continually measure and observe Programs against planned Program targets detailed in the Annual Workplan and Strategic Plan.
- **Evaluation** - reviewing the Programs to ensure they are effective and efficient for achieving objectives outlined within the Strategic Plan.
- **Reporting** - reporting the results of the monitoring and evaluation of Georges Riverkeeper Programs in the Annual Report on the Workplan as well as in other ways.
- **Improvement** - make appropriate positive changes to the Programs, Strategic Plan and Annual Workplans based on learnings from monitoring, evaluation and reporting.



VERKEEPER



Georges Riverkeeper wishes to thank everyone who was involved in developing the Strategic Plan, particularly the Council staff involved.



STRATEGIC PLAN 2018-2022

