



Riverwatch Chemical Assessment Program

Assessing recreational water quality in the Parramatta River

Assessing recreational water quality in the Parramatta River is an important step in delivering the Parramatta River Masterplan. The Riverwatch chemical assessment program evaluates how chemical contaminants impact river sediment and water quality in the Parramatta River. Along with the Riverwatch microbial monitoring program, it helps inform decisions about proposed swimming sites along the river. The programs also inform future actions to improve waterway health across the Parramatta River catchment.

Background

The Parramatta River Masterplan

The Parramatta River Catchment Group (PRCG) released “[DUBA, BUDU, BARRA: Ten Steps to a Living River: The Parramatta River Masterplan](#)”, in October 2018, with the mission of making the Parramatta River swimmable again by 2025.

Sydney Water is the overall coordinating lead for Masterplan delivery, working in collaboration with key stakeholders to achieve the PRCG’s mission. Sydney Water is also the lead agency for Masterplan Step 2: Keep Watch, which is focused on establishing a Riverwatch monitoring program for the Parramatta River. The Riverwatch Program is essential to understanding the opportunities for swimming in the river over the short and long term.

The Riverwatch Program

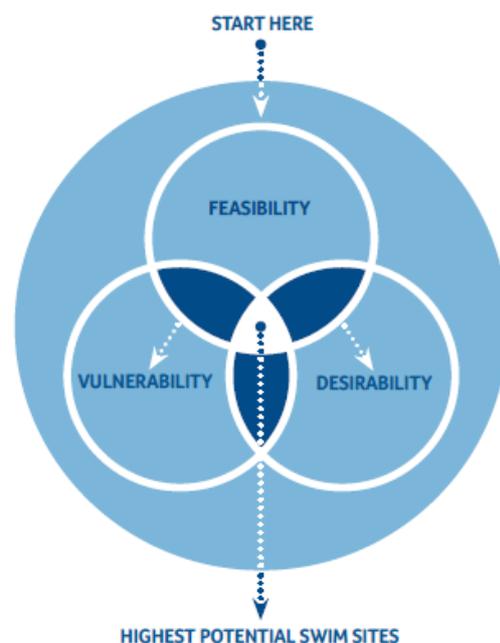
The Riverwatch Program will assess the microbial and chemical contaminants in the water and sediment at each of the proposed swimming sites. The combined monitoring will inform whether proposed swimming sites can be activated for recreation, what types of activities will be possible (e.g. swimming, boating) and the conditions for this occur. The program will also help to prioritise actions and investment to improve waterway health across the catchment.

Activating swimming sites

The Parramatta River catchment is heavily urbanised. Chemical contaminants are known to exist in the river as a result of historic land uses and poor waste management practices. Understanding how these activities have impacted river sediments and water quality will be key to activating swimming sites. The [Swimming Site Activation Framework](#) identifies the three elements that need to be considered before opening a swimming site.

- **Feasibility:** Is it possible to activate the site? Are there any restrictions?
- **Vulnerability:** What are the site risks? Can these be managed?
- **Desirability:** Will people use the site if we open it?

The chemical assessment program forms a key part of the vulnerability assessment for each site.



Swimming Site Activation Framework

Approach to chemical assessment

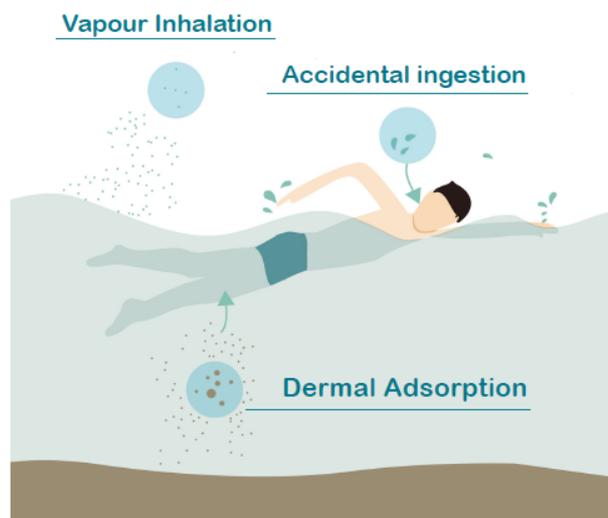
The University of New South Wales is working with experts at Sydney Water, NSW Health, the Environment Protection Authority, Department of Planning Industry & Environment and councils to develop the chemical assessment program. The team is applying enHealth's [Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards](#) to identify chemical contaminants of concern, understand toxicity and develop an exposure assessment for recreational water activities. This information will inform the sampling program and help us to understand any potential risks that may arise from future recreation activities.

What are we looking for?

Previous sediment and water quality monitoring within the river and a review of historic land uses near proposed swimming sites helps us in identifying potential chemical contaminants of concern for recreational water users. These include heavy metals, dioxins, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), surfactants and pesticides.

Exposure Assessment

The exposure assessment is a critical and complex area of the risk assessment. It requires decisions to be made about the magnitude, frequency, extent, character and duration of exposure to chemicals. The assessment must also consider the range of exposed populations (e.g. children playing, adults swimming) and potential exposure pathways for each.



Example of the exposure pathways for an adult swimming

Sampling Program

Sediment samples will be collected in several locations across each proposed swimming site to account for variations in sediment accumulation and to understand the relationship between sediment size and contaminants. Water samples will be collected during a variety of weather conditions to understand how the presence of contaminants are affected by changing conditions in the river.

Next steps

The combined results from the chemical assessment and microbial monitoring programs will be reviewed to determine how a proposed site may be activated in the future.

Sites that are not suitable for swimming in the short term may still be suitable for other water-based activities.

Like more information?

To know more about the Riverwatch Program contact:

Alex Michie, Riverwatch Coordinator
alexander.michie2@sydneywater.com.au

Ph: 0401 709 142