

PROJECT DATA SHEET *Sydney Catchment Authority* *biomonitoring programs*

Client

Sydney Catchment Authority

Location

Sydney Catchment Authority Area of Operations

Year

Ongoing (commenced Spring 2001)

Contact

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The challenge

The Sydney Catchment Authority (SCA) operates three major biological monitoring programs to ensure the quality and quantity of its raw water supply:

- Macroinvertebrate Monitoring Program (MMP)
- Woronora Macroinvertebrate and Diatom Monitoring Program
- Avon Dam Environmental Flows Project

The solution

Ecowise Environmental implement three biological monitoring programs for SCA using extensive knowledge of the SCA catchments, and a highly trained aquatic ecology team with an exemplary OH&S record.

The MMP is an annual program of macroinvertebrate sampling and analysis that has been undertaken each Spring since 2001. The program has an established protocol—NSW Australian River Assessment System (AUSRIVAS)—of sampling three sites within each of the 27 sub-catchments, totalling 81 sites across the SCA's entire catchment area. Of these three sites per sub-catchment, two are core or fixed sites for long-term monitoring, and the third site is a roaming site that is located in a different location each year to allow a wider area of the sub-catchment to be captured by the sampling program.

The conceptual design of the MMP provides core sites that are generally located toward the bottom-end of each sub-catchment to attempt to capture the accumulated effects of stream conditions from the upper tributaries and reaches, and thereby represent the sub-catchment. A roaming site is provided to enable a wider area of each sub-catchment to be monitored over time to capture emerging trouble spots and/or improving conditions.

The Woronora Macroinvertebrate and Diatom Monitoring Program is a biannual (Autumn and Spring) program designed to investigate an adaptive regime of environmental flow releases downstream of Woronora Dam. A key component of the adaptive management regime is establishing an appropriate environmental monitoring program to assess the effectiveness of the environmental releases. The assessment of the effectiveness of environmental flow releases on macroinvertebrates and diatom communities in the Woronora River downstream of the Woronora Dam requires sampling from sites not only within the Woronora River but also in other nearby regulated and unregulated sites.

The Avon Dam Environmental Flows Project is concerned with collecting pre-environmental flow data prior to the release of variable environmental flows from the Dam in late 2006. The collection of pre-impact data will allow trends associated with changing flows in the Avon River to be identified and assessed. The control/reference sampling will improve the interpretation of the data by allowing variations in biota that are not associated with changing flow regimes to be identified. Ecowise Environmental undertook the pre-environmental flow monitoring program for SCA in Autumn 2006. The monitoring program included a range of key indicators including aquatic macroinvertebrates, fish, diatoms, iron bacteria, water quality and geomorphology.

The outcome

The biological monitoring studies Ecowise conducts on behalf of SCA are vital in providing critical feedback on trends in the health of the waterways within the SCA catchment area, in addition to providing an ongoing assessment of the ecological benefits to the waterways of environmental flow releases downstream of major storages.