

Botany Bay Catchment Land Use Management Options Assessment

The Botany Bay Catchment and receiving waters are iconic in Australia. BMT WBM was commissioned by the Sydney Metropolitan Catchment Management Authority to prepare a catchment model using the eWater CRC E2/WaterCAST modelling framework and use this model to assess a wide range of catchment management options.

The development of the Botany Bay WaterCAST model included development of 2030 and 2070 future land use maps for the Botany Bay catchment. These land use maps allowed the assessment of the relative contributions of pollutants to the receiving environment from existing urban and greenfield development in addition to model scenarios investigating the efficacy of urban best management practices such as Water Sensitive Urban Design (WSUD). Adoption rates for catchment management measures were investigated through model scenarios in addition to potential climate change impacts.

Outputs from the WaterCAST model were used as boundary conditions for an ecosystem response model of the Bay itself and the major river estuaries leading into it. This allowed rapid feasibility and effectiveness assessments of various management scenarios for the land uses within the catchment to achieve defined environmental values for the Bay.

This project is one of the few “source to sea” modelling efforts that attempts to quantify the impact of best management practices on ultimate receiving water quality.

In addition to the modelling, capacity building was also undertaken with CMA, local council, state agency and catchment group staff to outline model development and also to provide the ability to construct future scenarios and additional models.

Client

Sydney Metropolitan Catchment Management Authority

Date

June 2006 - Present

Services & Expertise Provided

Development of Base E2/WaterCAST Model

Preparation of Future Land Use Maps

Development of Management Action Scenarios

Feasibility and Effectiveness Assessments of Scenarios

Provision of Model Outputs to Ecosystem Response Model

Preparation and Delivery of Capacity Building Initiatives



Botany Bay