



# DEVELOPING SCIENTIFIC TOOLS TO INFORM WATER MANAGEMENT DECISIONS IN THE SOUTH EAST

## IMPROVED MODELLING OF THE CATCHMENTS AND DRAINAGE NETWORK IN THE UPPER SOUTH EAST FOR MANAGEMENT OUTCOMES

**Project Fact Sheet:** E.2.4/2012

**Project Leader:** Matthew Gibbs, Adelaide University

**Project Duration:** May 2012 – April 2014

**Project Partners:**



**Government of South Australia**  
Department of Environment,  
Water and Natural Resources

## BACKGROUND

The scope, function and use of a Decision Support Framework to assist water resource decision-making in the South East were previously investigated by the Goyder Institute for Water Research (South East Water Research Program, E.2.2).

## ABOUT THE PROJECT

Building on the results of a previous study, this project will focus on informing water availability in 'Drain M' – located in the Lower South East. As part of this, a number of objectives have been identified:

1. Ensure the water requirements for Lake George are met;
2. Minimise damage to sea grasses – caused by fresh water flows, often with high nutrients, out to sea;
3. Minimise the volume of water diverted north along the REFLAWS floodway to support wetlands in the Upper South East and possibly the Coorong South Lagoon.

It's worth noting that the runoff volumes in Drain M are highly variable in any given year – from almost no runoff to large volumes above what is required to meet local environmental water requirements. What's more, due to changed land use in the catchment, the volumes of runoff are expected to be different to the levels historically observed.

As a result of this variability and non-stationarity, the available data alone has limited value in supporting decisions regarding the operation of Drain M. However, the tool developed in this project will enable an upcoming season to be

assessed and can then be translated into a seasonal operational plan, while providing clear information for decision-making.

## WHAT WILL IT DELIVER?

- > A software tool based on conceptual and stochastic modelling – designed to improve the confidence in flow volumes that can be expected along Drain M in an upcoming season.
- > The tool will have two main uses: firstly, to support the operators of the system in deciding when to divert flows from Drain M along the REFLAWS floodway; and, secondly, to provide a valuable communication tool for consulting with community groups in the region as part of discussions to justify and explain the diversion options undertaken.

## WHAT IT MEANS FOR THE FUTURE

The development of a software-based tool will inform operational decision-making in the Lower South-East regarding water availability. The model will allow water volume information to be estimated in order to support decisions about optimisation of environmental water requirements for a number of regional assets.

For further information: **Goyder Institute for Water Research**  
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*The Goyder Institute for Water Research is a partnership between the South Australian Government through the Department of Environment, Water and Natural Resources, CSIRO, Flinders University, University of Adelaide and the University of South Australia.*

