KEITH (TATIARA) MODEL 2010

Purpose

From Wood (2010), as part of the Resource Sustainability component of the South East National Water Initiative project 'Integrated Water Resource Management' (IWRM), a numerical groundwater flow model was developed for a subsection of the Tatiara Prescribed Wells Area (herein referred to as the Pilot Trial Zone or PTZ), in the Upper South East of South Australia. The purpose of this model was to act as a decision support tool for the Adaptive Management (AM) component of the IWRM project, and assist in developing 'trial' adaptive management scenarios.

Background

During 2008 and 2009, two workshops were held with community members, technical staff and other key stakeholders in the PTZ to develop pilot guidelines for Adaptive Management. Through this process, several Resource Condition Limits based on groundwater levels were developed for the PTZ. The groundwater model was then used to run a number of scenarios to see how different extraction regimes would perform against the RCLs under various climate conditions.

Location

The location of the model domain is shown in Figure 1.

Model structure

The model was constructed in Visual MODFLOW version 4.1, and developed in line with the Murray-Darling Basin Commission guidelines for groundwater modelling in Australia (Middlemis, 2001).

Model domain and grid size

In total, the area modelled is approximately 64 x 68 km, and is discretised into grid cells of 250 x 250m. The bounding coordinates of the model domain are (south-west) 422646E, 5953652N and (north-east) 486847E, 6022354N (GDA 1994, MGA Zone 54).

Model layers

The conceptual model is shown in Figure 2 and the model was constructed as three layers model as shown Figure 3.

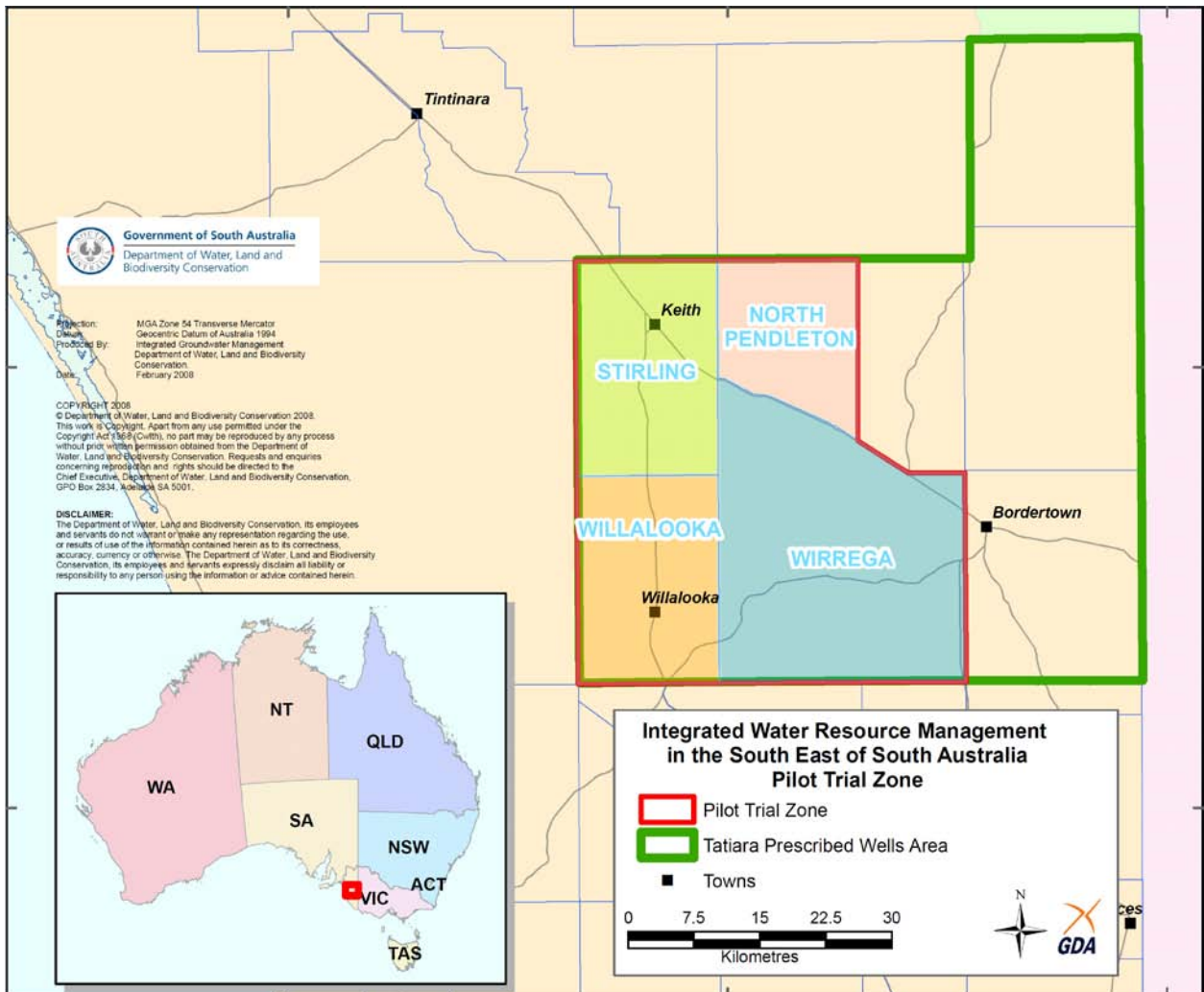**Figure 1.**   **Model domain**

Report

Wood C, 2010, Tatiara pilot adaptive management groundwater flow model, DFW Technical Report DFW 2011/13, Government of South Australia, through Department for Water, Adelaide
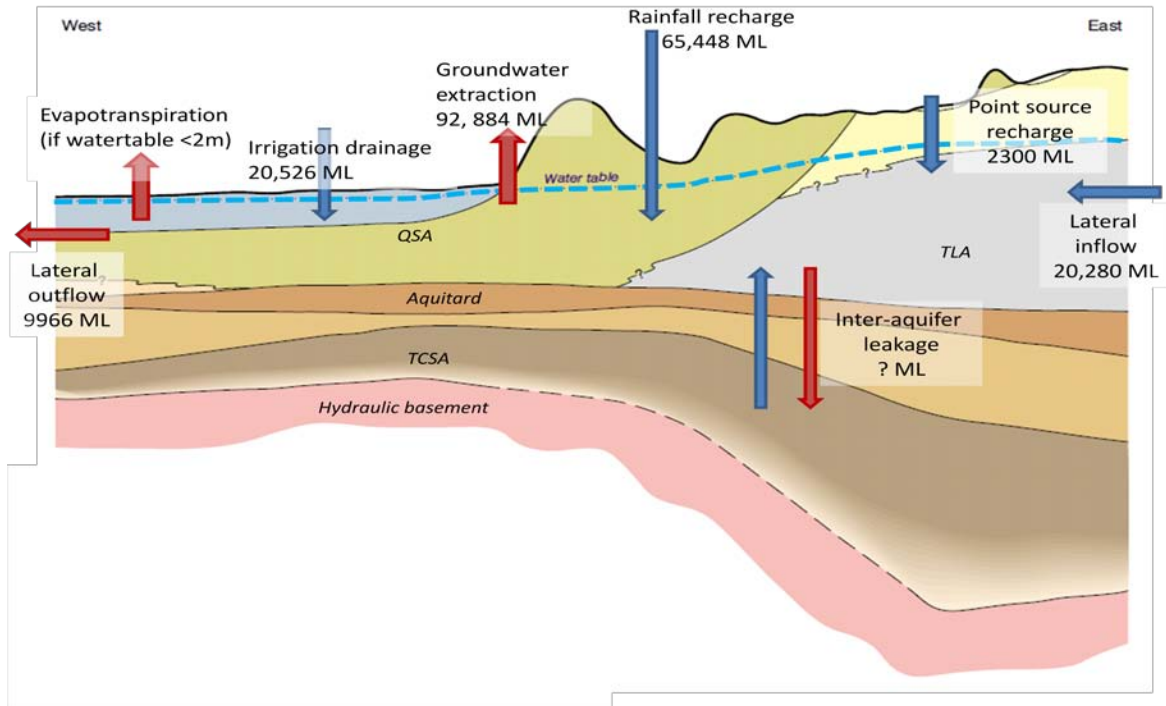
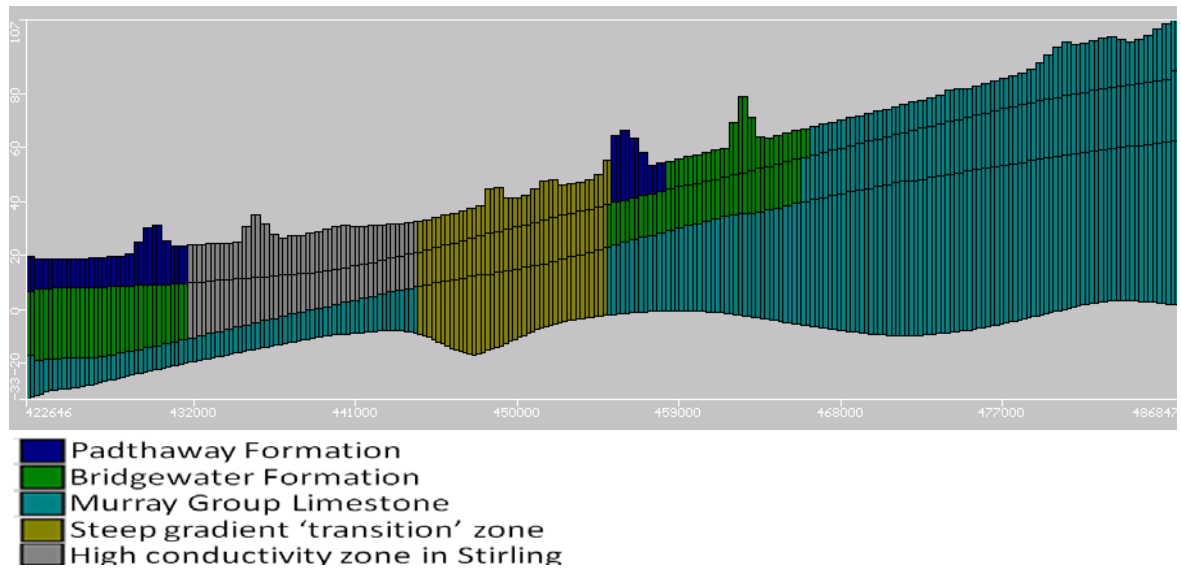**Figure 2.   Conceptual model of groundwater balance in the PTZ**

Figure 3.   East to west cross-section through model domain