

The development of a salinity zoning policy to reduce future salinity impacts of irrigation in the South Australian Murray-Darling Basin

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Abstract

Within the South Australian Murray-Darling Basin, the groundwater is highly saline and drains into the River Murray. Irrigation in the River Murray highland corridor is the main contributor to increased recharge to the groundwater and to the creation of groundwater mounds. As a result, increased volumes of saline groundwater enter the River Murray, with negative impacts on downstream users and the environment.

The location of future irrigation developments is critical to managing future salt loads to the River Murray. A groundwater model was developed to quantify salinity impacts of potential irrigation development in highland areas and compare impacts at a regional scale along the River Murray in South Australia.

Using this model, a salinity zoning policy was developed, declaring high and low salinity impact zones and capping the volume of water that can be used in the high salinity impact zone to existing levels.

The key steps in the policy development process, included data collection, tool development, social and economic impact assessment, stakeholder information and engagement, legal issues, transitional provisions, process and system development to implement and evaluate the policy and lessons learnt from implementation. The salinity zoning policy development has proven an excellent case study for natural resource management policy development in general, and has been used as such.

An interim zoning policy came into force on 1 July 2003, and a longer-term arrangement was adopted by the SA Government in June 2005. The objectives of the policy appear to be widely accepted, but the implications and support for the policy will face a real test when the region recovers from the current drought and the next growth cycle in irrigated horticulture in South Australia emerges.