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This publication details the interaction between groundwater and surface systems in northern Victoria, Australia, as reflected in the hydrochemistry and hydrodynamics of the waters and the palaeohydrology and geomorphology of the landscape. The nature and form of regional groundwater discharge zones in semiarid landscapes is examined. The work details the high degree of hydrologic instability in the regional aquifers, and how increased aquifer recharge as a consequence of post European landuse changes has led to widespread salinization. A framework for salinity management at a regional level is included.

There is a detailed account of the hydrochemistry of salt lakes and the hydrodynamics of salt lake - aquifer interactions, including the development of groundwater brine bodies. The distribution and development of acid groundwaters is discussed together with their potential to mobilize and transport base metals to form syngenetic and groundwater epigenetic sulphide deposits in the vicinity of salt lakes.