

MINERAL RESOURCES
TASMANIA
DEPARTMENT OF INFRASTRUCTURE
ENERGY AND RESOURCES

National
DRYLAND
SALINITY
Program

Tasmania
DEPARTMENT OF PRIMARY INDUSTRIES,
WATER AND ENVIRONMENT

A JOINT PROJECT OF DIER AND DPIWE

TASMANIAN GROUNDWATER FLOW SYSTEMS FOR DRYLAND SALINITY PLANNING

SCALE 1:500000

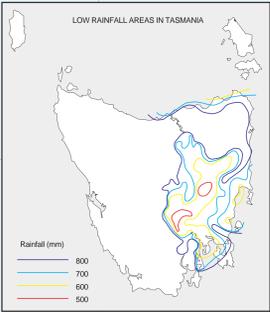
0 10 20 30 40 50 km
GHD, Australian Map Grid, Zone 55

A groundwater flow system is a landscape entity that includes all aspects of a single groundwater flow path. It is a fundamental unit that needs to be considered when management options for dryland salinity control are being selected. Groundwater flow systems characterise similar landscapes in which similar groundwater processes contribute to similar salinity issues, and where similar salinity management options apply.

The groundwater flow systems identified here have been identified on the basis of their hydrogeological characteristics, using a combination of geology, geomorphology and topographical information at the State scale. They identify the extent of groundwater processes controlling salinity together with the characteristic hydrogeological processes considered likely to result in dryland salinity, given suitable climatic and land-use conditions. It must be emphasised that these conditions do not occur across the whole State. In this study connectivity between systems has generally not been established, and these groundwater flow systems have not been examined in detail. For further information regarding this map, please refer to the accompanying report: "Tasmanian Groundwater Flow Systems Contributing to Dryland Salinity, 2001", M. Latonovic, W.L. Matthews, C. Bastick, S. Lynch, P. Dyson and E. Humphries".

Groundwater flow systems are classified in terms of whether they represent regional, intermediate or local groundwater flow systems in order to indicate the extent of salinity management issues.

Regional groundwater flow systems have recharge and discharge areas separated by a distance of fifty or more kilometres. The time for salinity to occur may be in the order of hundreds of years after land-use change. Regional systems can be overlain by local and intermediate flow systems. Intermediate groundwater flow systems generally occur on a scale between five and thirty kilometres. The time for salinity to occur may be in the order of five to twenty years after land-use change. They occur within individual catchments, but sometimes occur between subcatchments. Local groundwater flow systems have recharge and discharge areas within a few kilometres of one another. They generally occur within individual subcatchments and the time for salinity to occur may be in the order of five or ten years after land-use change.



LOCAL FLOW SYSTEMS

- Local flow systems in Quaternary sediments (talus and fill)
- Local to intermediate flow systems in Quaternary sediments (colluvium, coarse sands and shales)
- Local to intermediate flow systems in undifferentiated Quaternary to Tertiary sediments
- Local flow systems in high relief Jurassic Dalrieta
- Local flow systems in high relief Permian and Triassic sedimentary rocks
- Local flow systems in high relief Granitic rocks
- Local flow systems in high relief folded, fractured Proterozoic and Palaeozoic rocks

INTERMEDIATE FLOW SYSTEMS

- Intermediate flow systems in Tertiary sediments
- Intermediate to local flow systems in Tertiary Basalt
- Intermediate to local flow systems in Jurassic Dalrieta
- Intermediate flow systems in low relief Permian and Triassic sedimentary rocks
- Intermediate flow systems in low relief folded, fractured Proterozoic and Palaeozoic rocks

REGIONAL FLOW SYSTEMS

- Regional flow systems in Tertiary sediments

The data for this map was derived from the Tasmanian 1:250000 digital Geological Survey Atlas and 150m Digital Elevation Model of Tasmania.
Groundwater flow systems data compiled by M. Latonovic, W.L. Matthews, C. Bastick, S. Lynch, and P. Dyson.
Digital base information from Land Information Services Division, Department of Primary Industries, Water and Environment.
Map produced by the Data Management Group of Mineral Resources Tasmania using GIS software.

GEOLOGICAL TIME SCALE

GEOLOGICAL ERA	GEOLOGICAL PERIOD	Millions of years ago
CENOZOIC	Quaternary	1.8
	Tertiary	65
	Cretaceous	141
	Jurassic	206
MESOZOIC	Triassic	251
	Permian	298
	Carboniferous	354
	Devonian	410
PALAEOZOIC	Silurian	434
	Ordovician	480
	Cambrian	545
	Neoproterozoic	1000
PROTEROZOIC	Neoproterozoic	1000
	Palaeoproterozoic	2500