

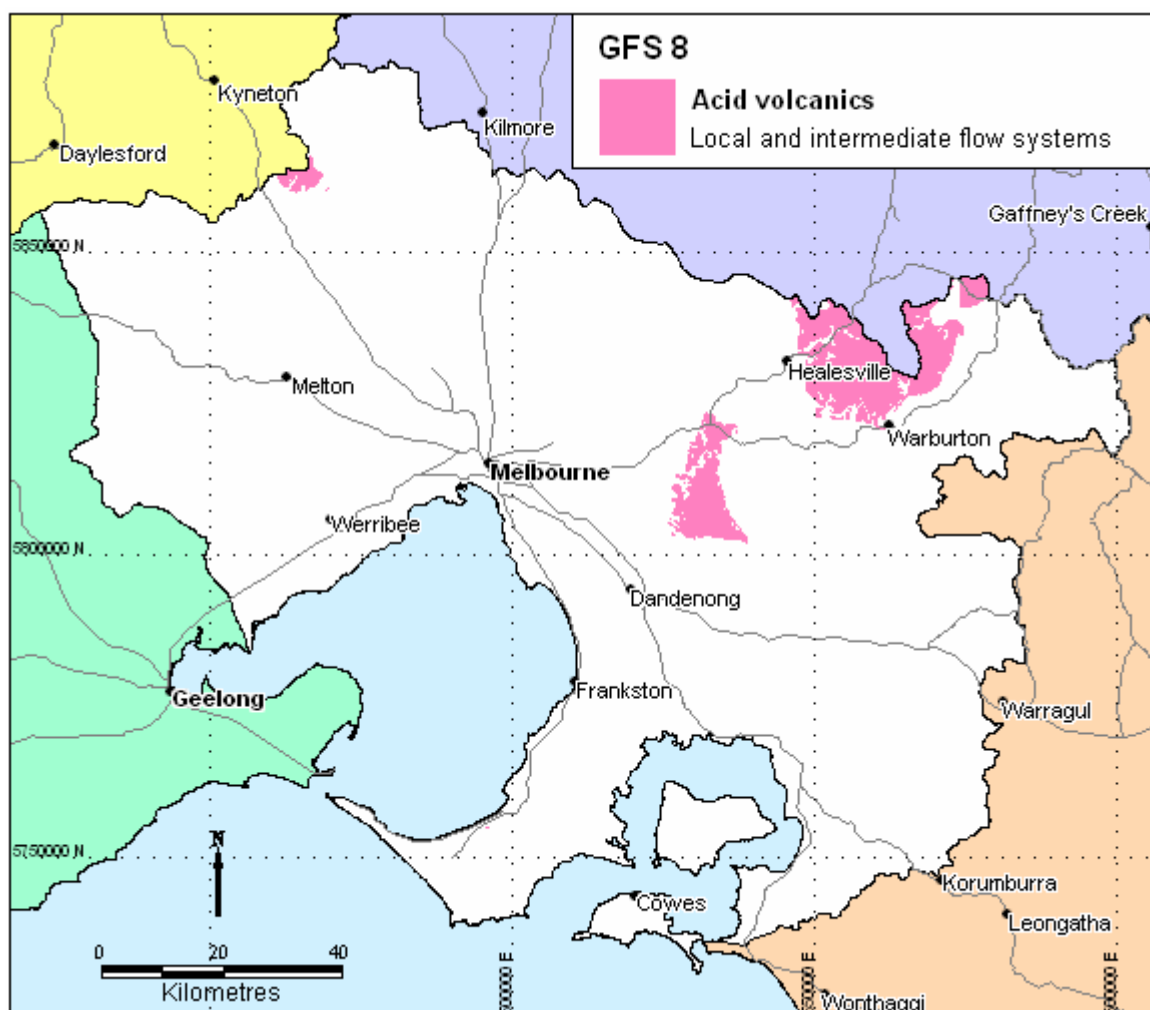
Local and intermediate flow systems in the acid volcanics

Region: Predominately north east PPWP CMA region

Type areas: Mount Evelyn, Belgrave, Mount Donna Buang, Mount Macedon

Brief description: Volcanic eruptions during the Late Middle to Upper Devonian Period (~370 Ma) emplaced a variety of acid volcanic rocks, mostly ignimbrites and rhyolites, in central Victoria. These rocks have been subsequently eroded to form many of the mountainous areas of the PPWP CMA region. The Dandenong Ranges, Macedon Ranges, and the Yarra Ranges.

Fresh groundwater flows through the fractured rocks in local and intermediate flow systems. Discharge often occurs as springs, which are the sources of many of the clear water mountain streams.



Problem statement: Salinity has not been mapped in this unit and is unlikely to be a problem.

Landscape attributes

Geology: Devonian Volcanics (Dvd, Dvc, Dvm)

Topography: Dissected ranges, ridges and valleys.

Land Systems:

Central Victorian Uplands

1.1 *East Victorian Dissected Uplands*

2.1 *West Victorian Dissected Uplands - Midlands*

Regolith: Often shallow stony soils, and corestones surrounded by a silty clay matrix. Locally deep clay soils of completely weathered ignimbrite, or areas of rock outcrop (tors).

Annual rainfall: 800 mm to 1800 mm

Dominant mid-1800s vegetation type: Forest

Current dominant land uses: National Park and conservation areas, water supply catchments, rural residential and urban development, tourist developments, recreation developments (eg. snowfields) and parklands.

Mapping method: Outcrop geology

Hydrogeology

Aquifer type (porosity): Fractured rock (secondary porosity)

Aquifer type (conditions): Unconfined

Hydraulic Conductivity (lateral permeability): Low, probably less than 1 m/d.

Aquifer Transmissivity: Low, probably less than 10m²/d.

Aquifer Storativity: Low, probably less than 0.05

Hydraulic gradient: Moderate to steep

Flow length: Highly variable, from a few metres to several kilometres.

Catchment size: Generally less than 1000 Ha, but could be up to 5000 Ha.

Recharge estimate: Unknown.

Temporal distribution of recharge: Seasonal (winter and spring), with more in wet years. Some contributions from snowmelt during spring.

Spatial distribution of recharge: Catchment wide, but probably greater on the gentler upper slopes and plateaus.

Aquifer uses: Use is limited by low yields and very hard to drill aquifer.

Salinity

Groundwater salinity (TDS): Low (< 1500 mg/L)

Salt store: Low

Salinity occurrence: None known

Soil Salinity Rating: None mapped

Salt export: None known

Salt impacts: None known

Risk

Soil salinity hazard: Low

Water salinity hazard: Low

Assets at risk: None known

Responsiveness to land management: Not known (or applicable), however it should be rapid for local systems and moderate for intermediate systems.

Management Options

There are no known land salinity issues to be managed.