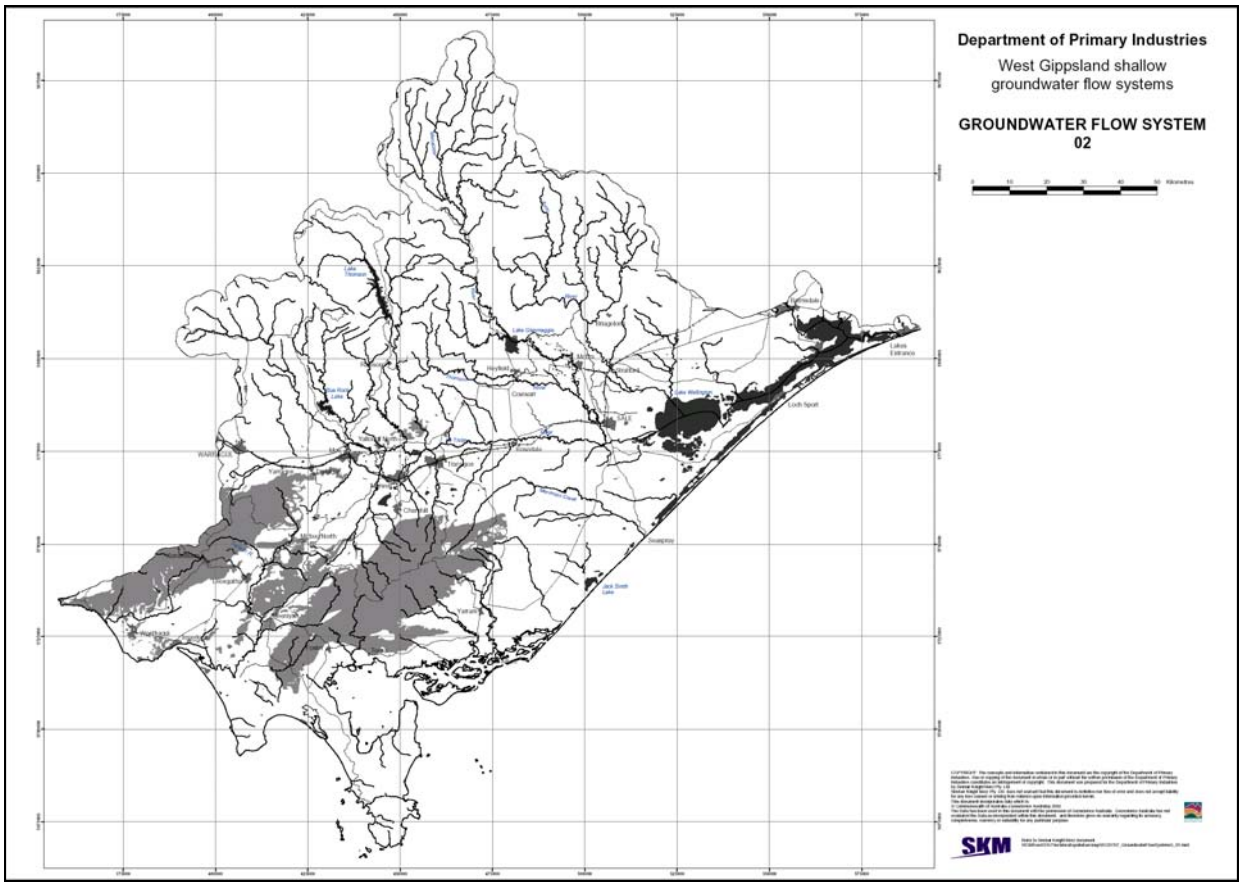
GFS 2: Mesozoic Bedrock

1. GFS definition



Geology constraint: All Mesozoic aged bedrock

Slope Constraint: None

Area constraint: None

Rationale for choice of GFS: Defined to separate bedrock fractured rock aquifer from unconsolidated sediments. Mesozoic rocks are differentiated from Paleozoic fractured rock aquifers because of their different weathering profile resulting in different potential recharge, discharge and salt store characteristics

GFS priority: Low

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2. The salinity problem

Salinity occurrence: 14 hectares (Source: West Gippsland Land Salinity GIS layer)

Assets being affected: Agricultural land

Area of mapped land salinity: 14ha (12ha Class 1, 2ha Class 2)
(Source: West Gippsland Land Salinity GIS layer)

Area of primary and secondary land salinity: 10ha secondary, 4ha primary/secondary
(Source: West Gippsland Land Salinity GIS layer)

Area of wetland salinity: None

Surface water salinity: None

Salinity process: The limited salinity in GFS2 is likely to be caused by local scale processes discharging into the topographically low valleys in the landscape.

Current area of less than 2m depth to water table: 120ha <2m, 36ha coastal plain (<2m AHD) = total 156ha (West Gippsland DTWT GIS layer)

Groundwater salinity: Variable, 1000-1500mg/L, 3000-7000mg/L, local areas of better quality, varies from potable quality in the Warragul area to stock quality only in the South Gippsland Highlands.
(Source: Warragul/Sale Hydrogeological Map (1995))

Land salinity trend: Unknown

Groundwater level trend: Unknown

3. Landscape attributes

Area: Strzelecki Ranges

Geology: Cretaceous rocks

Topography: Moderate and high slope undulating hills

Soil permeability: Predominantly very very low with some areas of moderate and high permeability.
(Source: West Gippsland Soil Permeability GIS layer)

Annual Rainfall: Highly variable, 800-1900mm (Source: West Gippsland Annual Rainfall GIS layer)

Annual Evaporation: In the Strzeleckis it ranges between <900 and 975mm. Near Warragul it ranges from 950mm to >1000mm. (Source: West Gippsland Annual Evaporation GIS layer)

Landuse: Dairy and other farming, timber plantations, small areas of native forest
(Source: West Gippsland Landuse GIS layer)

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- **Figure 13: Looking towards the coast and Wilson's Promontory from the South Gippsland Highway at Foster**

4. Hydrogeology

Geology: Sediments and metasediments

Aquifer type: Fractured rock

Hydraulic conductivity: Low (0.5-10m/day) (Source: Warragul/Sale hydrogeological map (1995))

Aquifer transmissivity: Low

Aquifer storage coefficient: 0.005-0.3 (Source: Warragul/Sale hydrogeological map (1995))

Hydraulic gradient: Unknown

Yield: Low yielding <0.5L/s (Source: Warragul/Sale hydrogeological map (1995))

Temporal recharge distribution: Likely to follow rainfall pattern (ie most recharge in winter and spring)

Spatial recharge distribution: Likely to be influenced by rainfall and slope – high recharge on the upland, low slope peaks

Recharge estimate: Unknown

Aquifer uses: Stock and domestic

Scale of groundwater flow path: Local (possibly with some intermediate influence)

Responsiveness to land management: Moderate – local systems but low transmissivity

National GFS type most like (ref Coram et al., 1998): Local 3 – Discharge from weathered fractured rock aquifers at break of slope

Groundwater flow between GFSs: No significant flow either to or from GFS2

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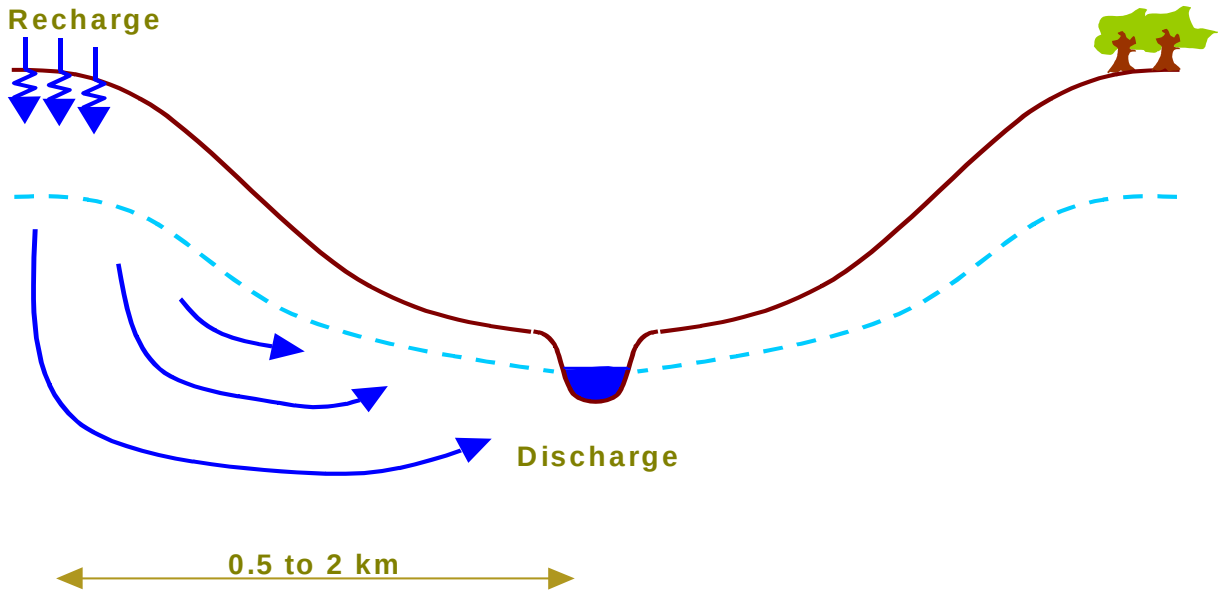
5. Conceptual model of recharge discharge relationship



- **Figure 14: Strzelecki Ranges at Toora**

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6. Salinity Management Options

Current salinity management: None

Recharge control options: NA

Groundwater discharge enhancement options: NA

Living with salt options: NA

Conflicts with other NRM programs: NA

Synergies with other NRM programs: NA