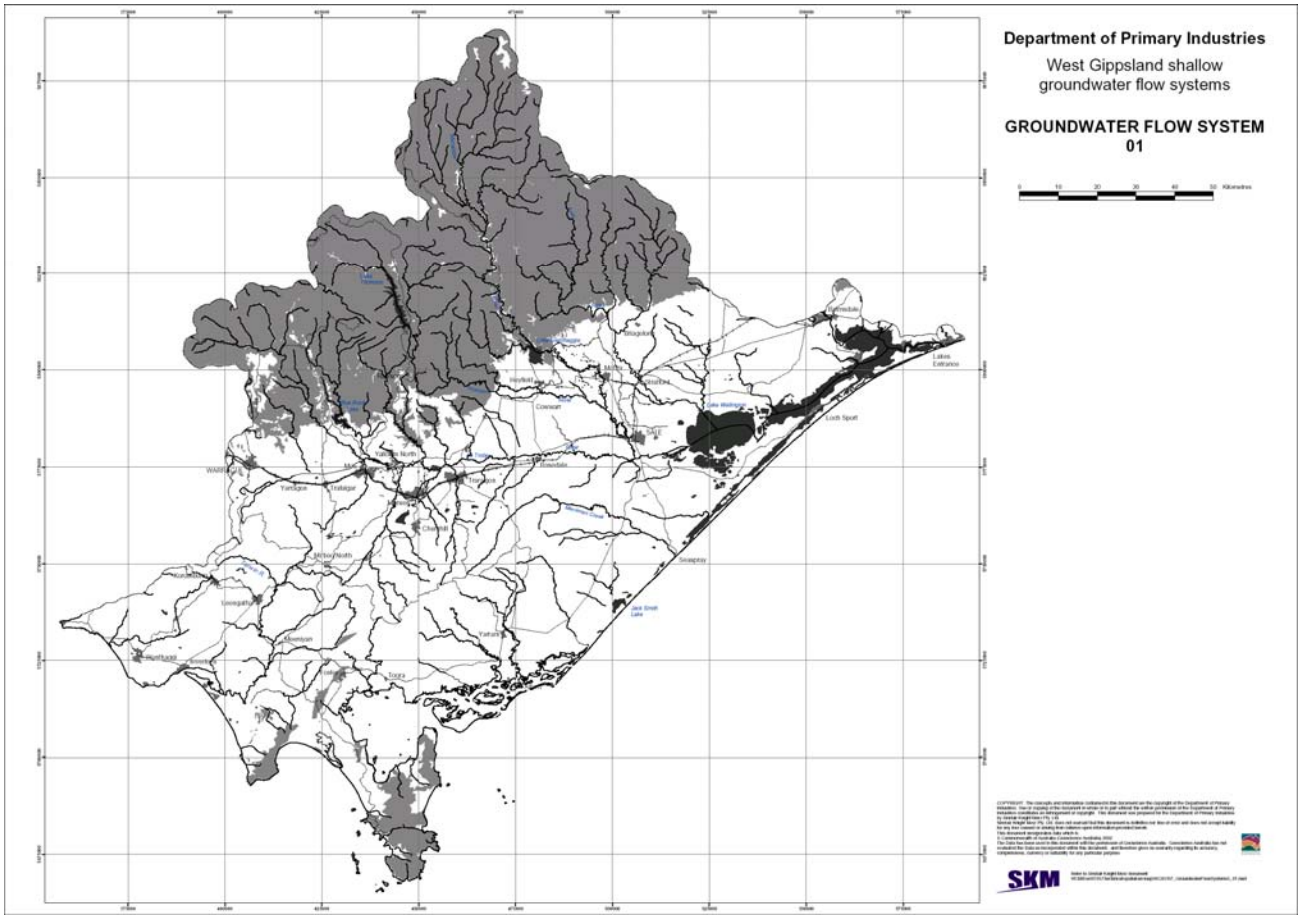
4.2 Characteristics of the GFSs

GFS 1: Palaeozoic Bedrock

1. GFS definition



Geology constraint: All Palaeozoic aged bedrock

Slope Constraint: None

Area constraint: None

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

GFS priority: Low

GFS 1: Palaeozoic Bedrock

2. The salinity problem

Salinity occurrence: No mapped land salinity

Assets being affected: None

Area of mapped land salinity: None

Area of primary and secondary land salinity: None

Area of wetland salinity: None

Surface water salinity: None

Salinity process: None

Current area of less than 2m depth to water table: 151ha <2m, 54ha coastal plain (<2m AHD) = total 205ha (West Gippsland DTWT GIS layer)

Groundwater salinity: Variable, 1000-1500mg/L, 3000-7000mg/L, local areas of better quality.
(Source: Warragul/Sale Hydrogeological Map (1995))

Land salinity trend: NA

Groundwater level trend: Unknown but assumed to be relatively stable due to unchanging level of forest cover and limited extractions.

3. Landscape attributes

Area: Highlands

Geology: Palaeozoic Bedrock

Topography: Moderate to steep hills and mountains

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

Annual Rainfall: Highly variable, 800mm on lower slopes to >1900mm on highest peaks
(Source: West Gippsland Annual Rainfall GIS layer)

Annual Evaporation: Between 925mm and >1000mm in Alpine areas, between <900mm and 925mm around Wilson's Prom. (Source: West Gippsland Annual Evaporation GIS layer)

Landuse: Mainly native vegetation and forestry with large areas of cleared farming land.
(Source: West Gippsland Landuse GIS layer)

4. Hydrogeology

Geology: Sediments, metasediments and intrusives

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

GFS 1: Palaeozoic Bedrock

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

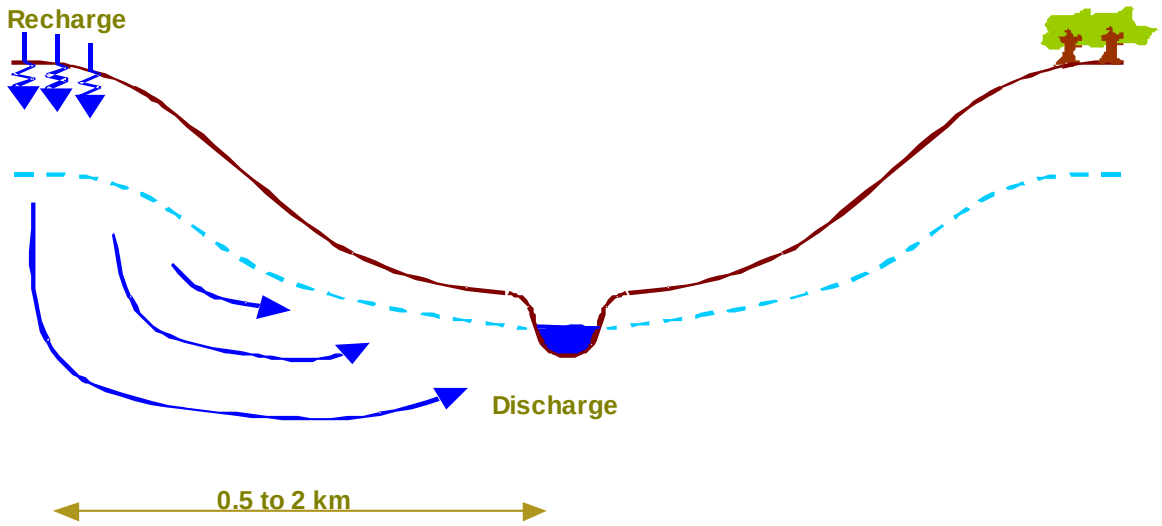
Scale of groundwater flow path: Local (possibly with some intermediate influence)

Responsiveness to land management: Moderate to local systems but low transmissivity. May create local salinity problems if widespread clearing were to occur.

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

Groundwater flow between GFSs: No significant flow either to or from GFS1

5. Conceptual model of recharge discharge relationship



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