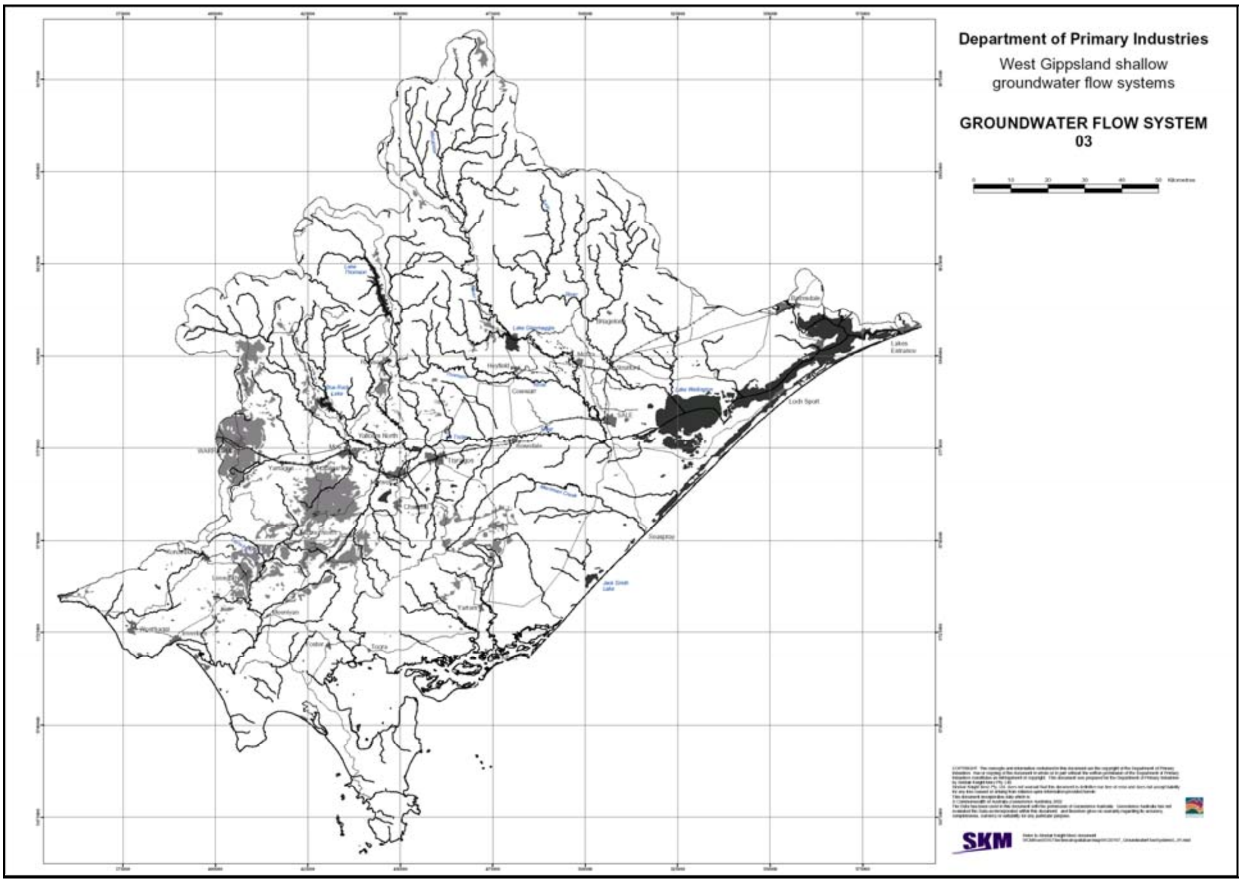
GFS 3: Tertiary Basalts

1. GFS definition



Geology constraint:	All Tertiary aged basalts (Tvo)
Slope Constraint:	None
Area constraint:	None
Rationale for choice of GFS:	Tertiary basalts likely to have connection to deeper Latrobe Group Aquifer
GFS priority:	Low

2. The salinity problem

Salinity occurrence: None (Source: West Gippsland Land Salinity GIS layer)

Assets being affected: None

Area of mapped land salinity: None (Source: West Gippsland Land Salinity GIS layer)

Area of primary and secondary land salinity: None (Source: West Gippsland Land Salinity GIS layer)

Area of wetland salinity: None

GFS 3: Tertiary Basalts

Surface water salinity: None Stations with <100% attainment of 90 percentile salinity SEPP: Waterhole Ck at Princes Hwy (90%), Bennetts Ck at Jeeralang Rd (82%)

Salinity process: None

Current area of less than 2m depth to water table: 10ha <2m (West Gippsland DTWT GIS layer)

Groundwater salinity: Unknown

Land salinity trend: None

Groundwater level trend: Unknown

3. Landscape attributes

Area: Strzelecki Ranges and Moe Basin

Geology: Tertiary basalts

Topography: Low rolling hills on edge of Strzelecki Ranges

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

Annual Rainfall: In the Warragul area it varies between 1000-1200mm. In the Mirboo North area it generally ranges from 800mm-1100mm. (Source: West Gippsland Annual Rainfall GIS layer)

Annual Evaporation: 950-975mm in the Warragul area and 925-975mm in the Mirboo North area. (Source: West Gippsland Annual Evaporation GIS layer)

Landuse: Predominantly agriculture with some forestry and areas of native vegetation

(Source: West Gippsland Landuse GIS layer)

4. Hydrogeology

Geology: Basalts interfingered with Tertiary Sands

Aquifer type: Fractured rock

Hydraulic conductivity: Vary laterally in the Yarragon formation

Aquifer transmissivity: Unknown

Aquifer storage coefficient: Unknown

Hydraulic gradient: Unknown

Yield: Unknown

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

Spatial recharge distribution: Recharge likely to be greatest on sandier sections of the profile
Recharge estimate: Unknown

Aquifer uses: Unknown

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

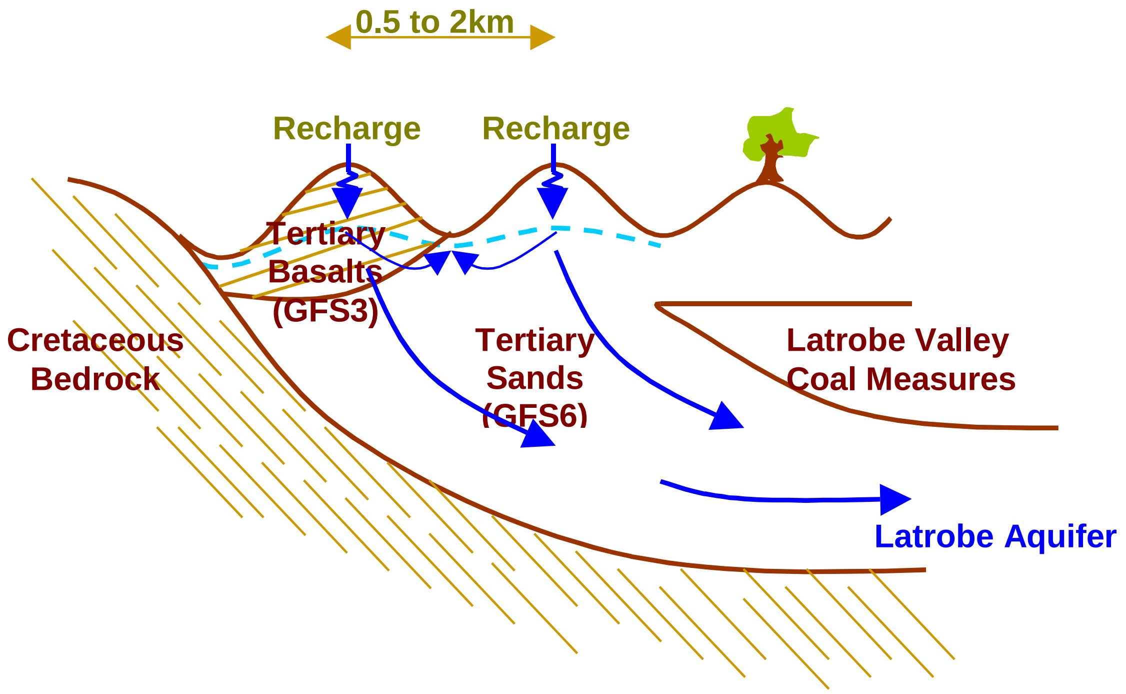
Responsiveness to land management: Likely to be relatively quickly given the local flow path

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

GFS 3: Tertiary Basalts

Groundwater flow between GFSs: Flow from GFS 3 to GFS 6

5. Conceptual model of recharge discharge relationship



6. Salinity Management Options

Current salinity management: None

Recharge control options: Potential to revegetate cleared areas to reduce down-gradient salinity. Questionable effect given that most recharge is likely to be vertical to Latrobe Aquifer with little horizontal water table flow

Pasture or crop potential	*Trees for biodiversity potential*	*Trees for forestry potential*	*Surface drainage potential*	*Irrigation management potential*
None	Moderate	Moderate	Weak	None

Groundwater discharge enhancement options: None

Living with salt options: None

Conflicts with other NRM programs: If revegetation was an option for salinity control, there may be a conflict with sustainable management of the Latrobe Aquifer (Yarram WSPA) which is likely to discourage recharge reduction in this area

Synergies with other NRM programs: NA