2.2 Key additional data sets used to determine GFS characteristics

Table 2 details some of the data sets that were used to populate the characteristics of each of the Groundwater Flow systems. Maps of these data sets are given in the text and Appendix A.

Table 2: Datasets used to determine GFS characteristics

Characteristic	Source	Figure number	Section
Area of land salinity	Amalgamation of 5 sets of land salinity mapping data collected by SKM, DNRE and CF&L	Figure 1	Section 1.1
Area of wetland salinity	Interpretation based upon 1788 and 1988 wetland GIS layers from DSE	Figure 2	Section 1.1
Elevation	Digital elevation model compiled from 1:25,000 scale spot heights and contours + surveyed bore elevations + surveyed benchmarks (selected towns only)	Figure 6	Section 2.1
Depth to water table	Watertable depth map created by SKM for the draft West Gippsland Salinity Management Plan	Figure 28	Appendix A
Soils	Dataset compiled from mapping undertaken by Sargeant and Imhoff for DPI		
Rainfall	CSIRO rainfall data	Figure 30	Appendix A
Evaporation	CSIRO evaporation data	Figure 31	Appendix A
Evaporation subtracted from rainfall	CSIRO evaporation and rainfall GIS layers subtracted from each other		
Satellite image	Summer 2000 Landsat image from DSE dataset	Figure 32	Appendix A
Landuse	Bureau of Resource Sciences (BRS) data from national mapping layer combined with detailed landuse mapping undertaken by the then DNRE in the Macalister Irrigation District	Figure 33	Appendix A

The GFS were characterised according to various standard categories stated in Coram *et al*. (2001) and shown in Table 3.

- **Table 3: Categories used to characterise the GFS (adapted from www.nlwra.gov.au/atlas)**

Attribute	Rating	Meaning/Value
Scale	Local	Groundwater flows over distances <5km
	Intermediate	Groundwater flows over distances 5-50km
	Regional	Groundwater flows over distances >50km
Aquifer transmissivity	Low	Less than $2m^2$/day
	Moderate	$2m^2$/day to $100m^2$/day
	High	Greater than $100m^2$/day
Groundwater salinity	Low	Less than 2,000mg/L
	Moderate	2,000mg/L to 10,000mg/L
	High	Greater than 10,000mg/L
Catchment size	Small	Less than $10km^2$
	Moderate	$10km^2$ to $500km^2$
	Large	Greater than $500km^2$
Annual rainfall	Low	Less than 400mm
	Moderate	400mm to 800mm
	High	Greater than 800mm
Salinity class	Class 1	Loss of production
	Class 2	Salinity land covered with salt tolerant volunteer species
	Class 3	Barren saline soils, typically eroded with exposed sub-soils
Responsiveness to land management	Low	Salinity benefits accrue over timeframes >50 years
	Moderate	Salinity benefits accrue over timeframes from 30 to 50 years
	High	Salinity benefits accrue over timeframes <30 years

This study also uses the parameters shown in Table 4 to provide additional characterisation of the groundwater flow systems.

- **Table 4: Parameters used to provide additional characterisation of the GFS**

Attribute	Rating	Meaning/Value
Aquifer hydraulic conductivity	Low	Less than 0.5m/day
	Moderate	0.5 to 20m/day
	High	Greater than 20m/d
Aquifer storage coefficient	Low	Less than 0.01
	Moderate	0.01 to 0.1
	High	Greater than 0.1
Recharge rates	Low	Less than 2% of rainfall
	Moderate	2 to 5% of rainfall
	High	Greater than 5% of rainfall