



## ***Plantation Water Table Monitoring***

A greater knowledge of the water table under plantations is necessary if underground water resources are to be managed sustainably. Five monitoring sites in and around farm plantations in the Mid and Upper South East were established to demonstrate the effect of trees on the water table.

The project was jointly funded by the [Natural Heritage Trust](#), [CSIRO](#) and [ForestrySA](#). The level of impact that plantations have on the water table is still being investigated after eight years by monitoring the water table at various wells and recording the trends.

### **Background**

There is considerable debate in South East of South Australia over water allocation for a variety of uses. Claims that trees prevent recharge and use water directly from the aquifer may be used to restrict the planting of trees. This would adversely effect development of industrial and farm forestry. This project aims to demonstrate the effects of trees on recharge and use of aquifer water over a range of typical South East soils in a number of locations.

### **Objectives**

The objectives of the study are to:

- Monitor the water table over a range of common site types in the vicinity of plantations in the South East region to examine the effects of trees on local water tables over an indefinite period; and
- Compare trends in the water table under *P. radiata* and *E. globulus* at one location.

### **Results**

The complex nature of underground water systems is a major factor in the trends seen in graphs 1 to 5. Water table recharge rises and falls seasonally with a lag phase after winter rainfall. These trends are not significant and rainfall decline may have resulted in the water table level decline. There are no distinct trends, as the water table at some monitoring wells has remained unchanged whilst it has dropped or risen at other monitoring wells over the past eight years.

### **Conclusions**

The monitoring of the water table in proximity to forests is a long-term project, as most of the plantations are relatively young and very recent events such as harvesting have taken place in the past six months. Over the lifetime of the forest more significant trends may be apparent. The landscape effect will have a greater effect on the water table and any change in the water table may be more attributable to an overall change in the water table at a landscape level.



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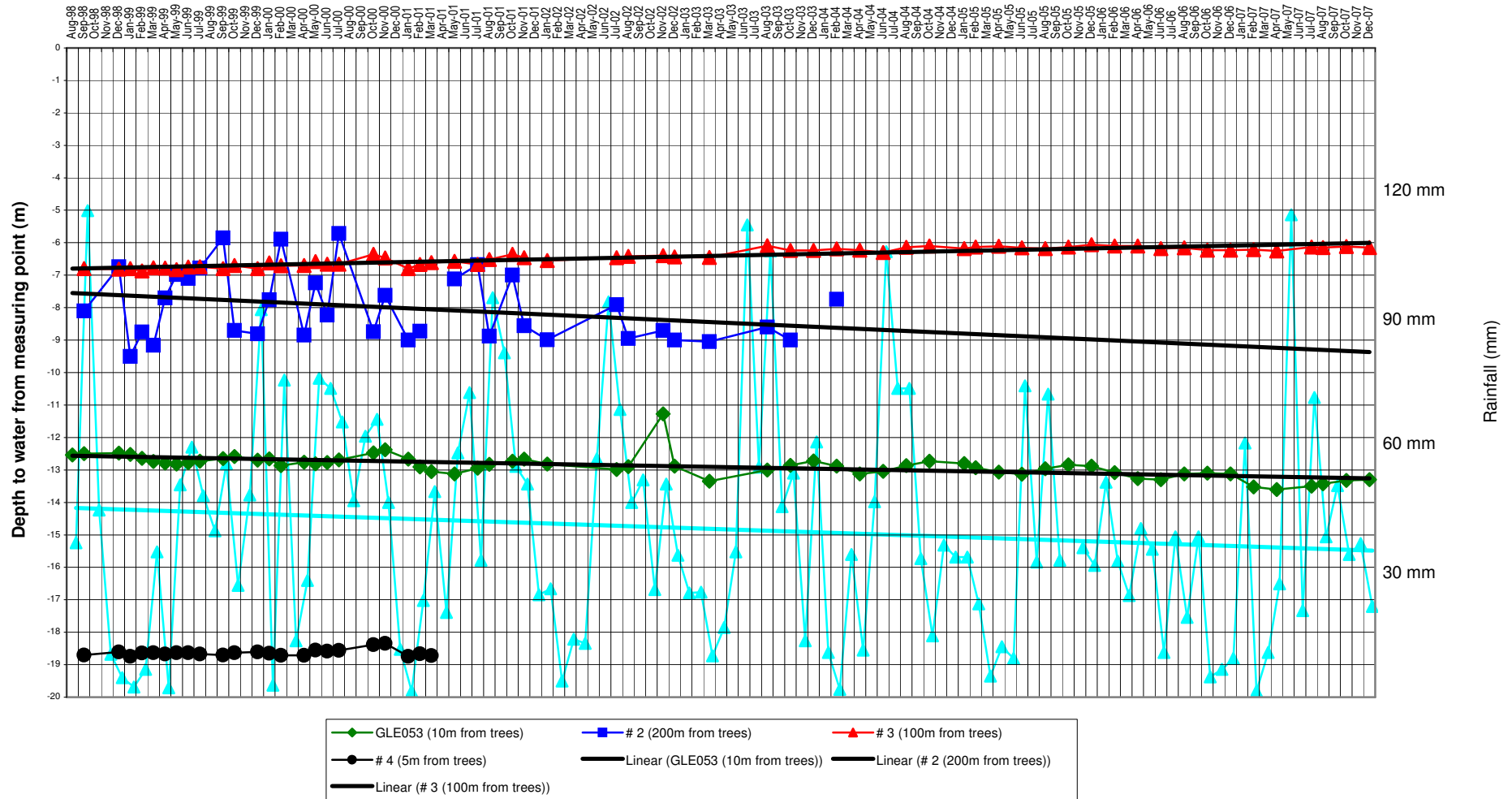
*Fax:* (08) 8723 1941

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# Groundwater Hydrology – Burge

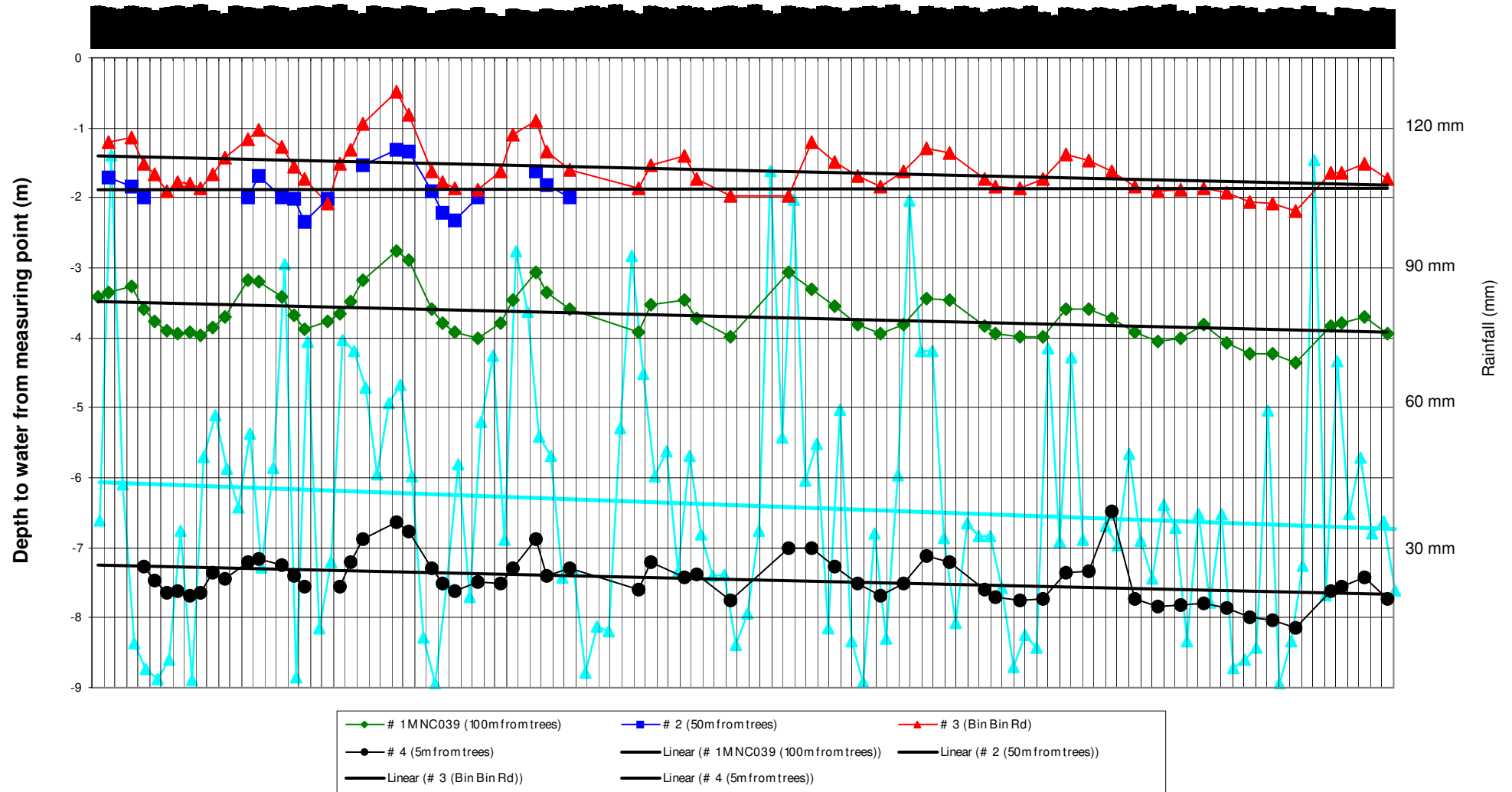
## Rainfall – Padthaway (Marcollat)





# Groundwater Hydrology – Warner

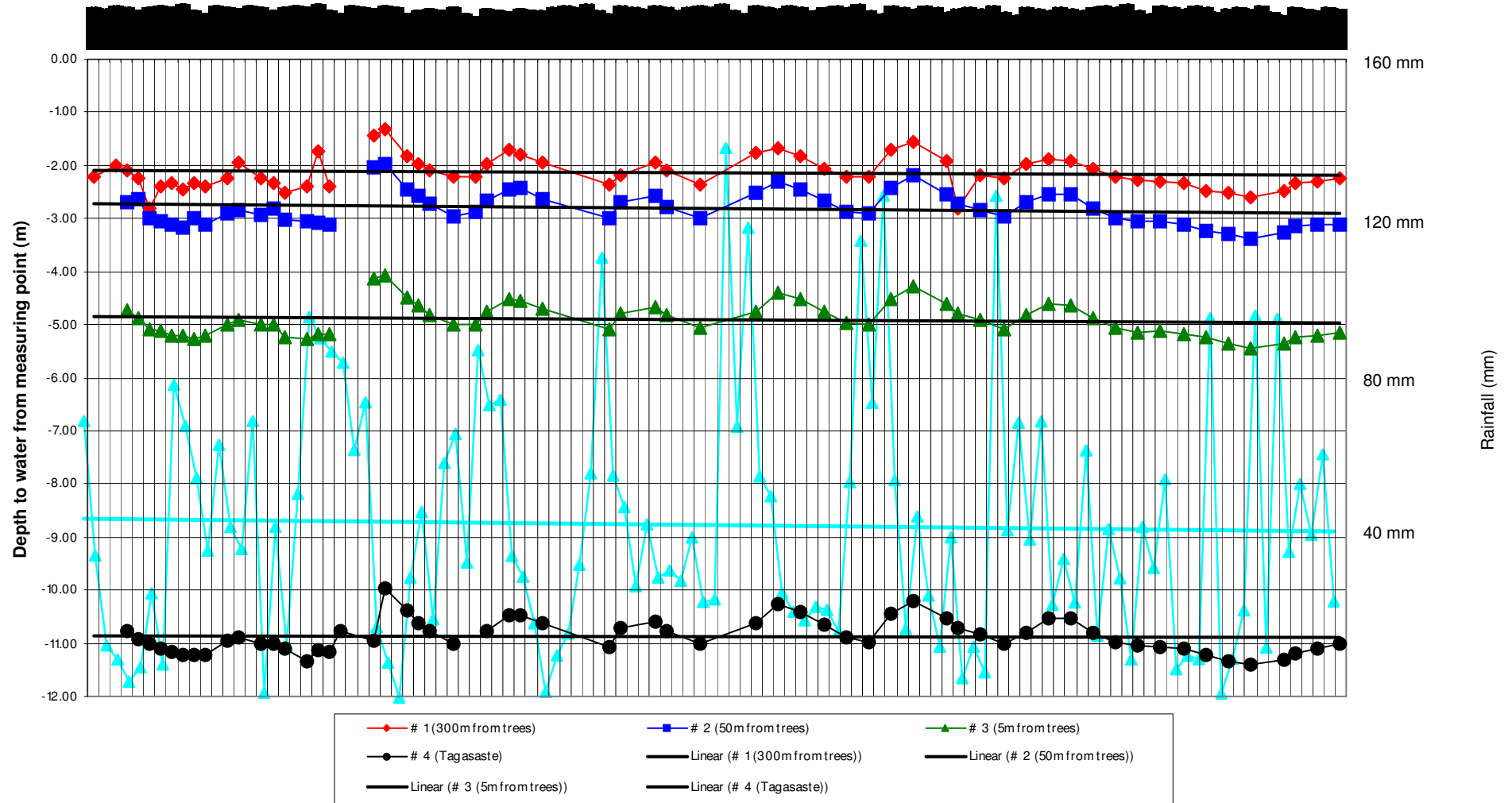
## Rainfall – Padthaway (Marcollat)





# Groundwater Hydrology – Westphal

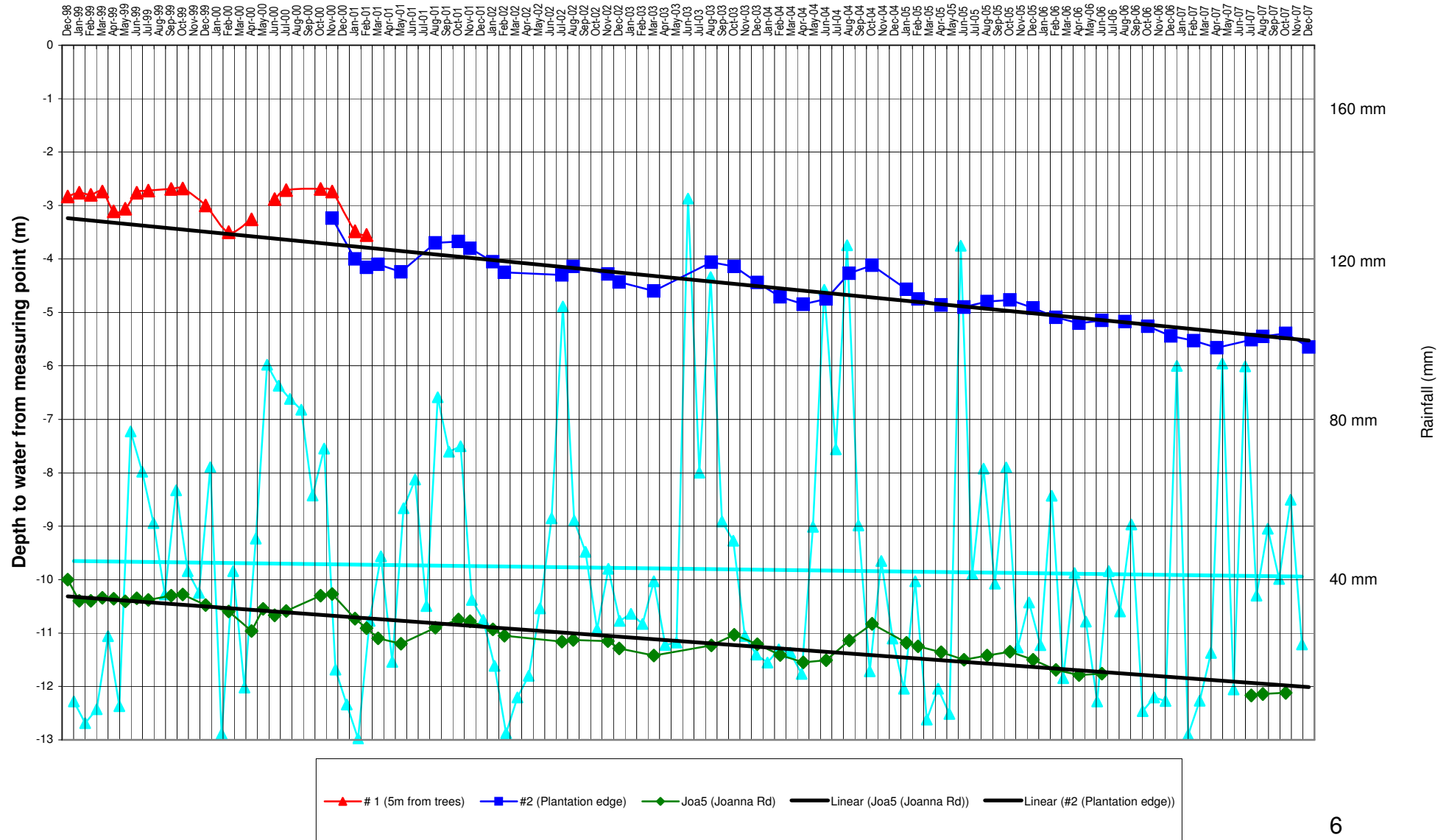
## Rainfall – Lucindale (Post Office)





# Groundwater Hydrology – Earl

## Rainfall – Lucindale (Post Office)





# Groundwater Hydrology – The Heath

## Rainfall – Penola (Post Office)

