

# Measure to Monitor

(a sub-project of Smarter Irrigation in SA)  
South East, South Australia

SOUTH  
AUSTRALIAN  
RESEARCH &  
DEVELOPMENT  
INSTITUTE  
**PIRSA**

A weekly review of irrigation sensor and pasture growth data to improve irrigation scheduling throughout the year.

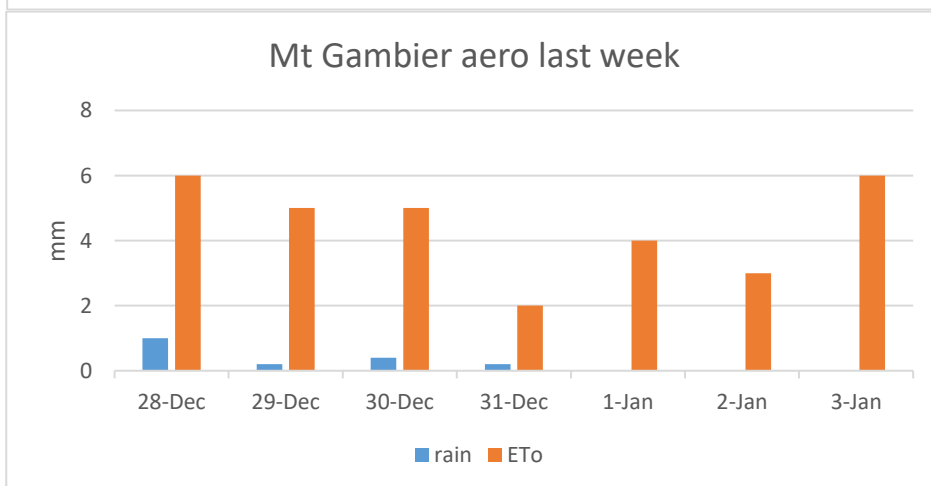
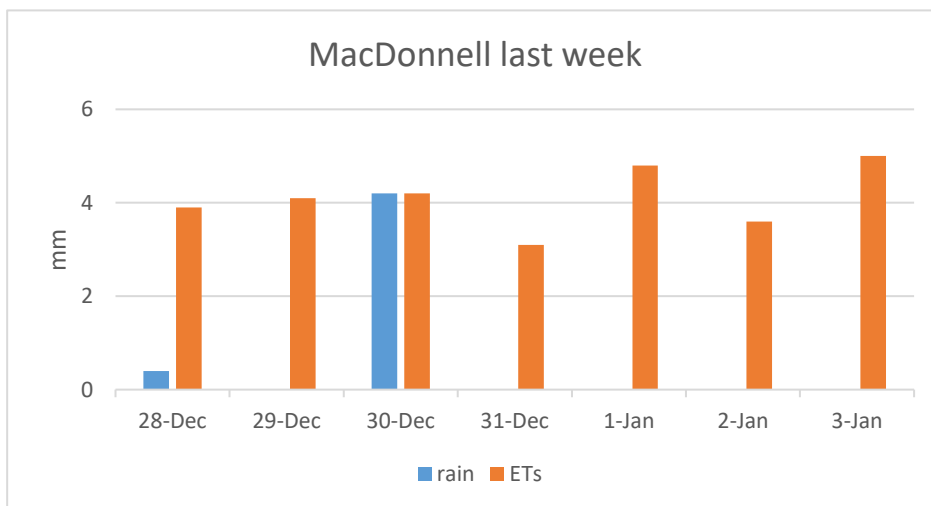
**4 January 2018**

Brought to you by Nigel Fleming, SARDI, (0401) 122 136

## Previous 7 days ~ average Evapotranspiration & Rainfall

	ETo's (mm/day)	Rainfall (mm)
MacDonnell	4.1	4.6
Mt Gambier aero	4.4	1.8

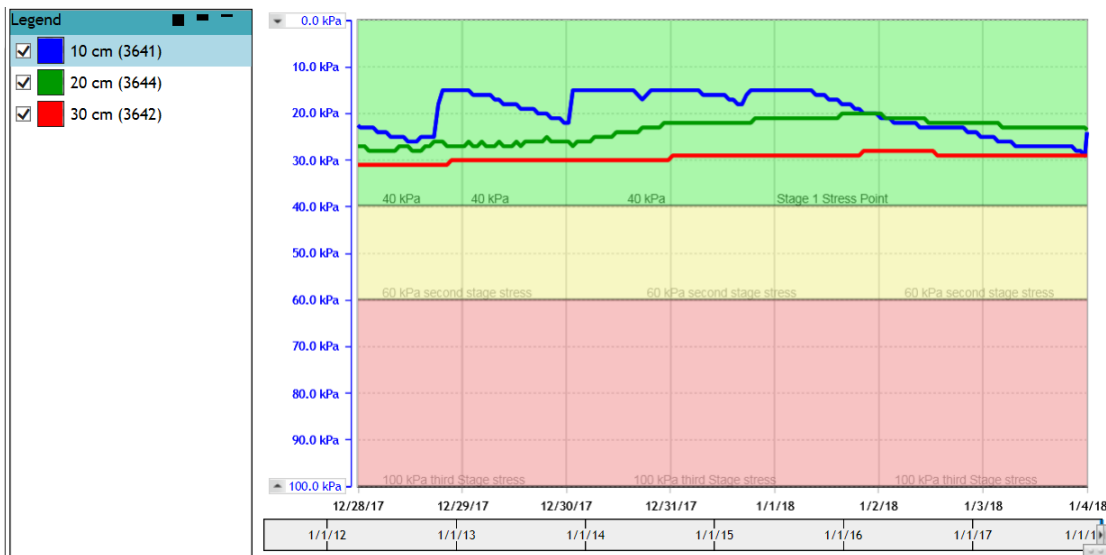
A small rainfall of 4.4mm at MacDonnell on Saturday last week, but Mt Gambier missed it.



## What are the irrigation sensors telling us:

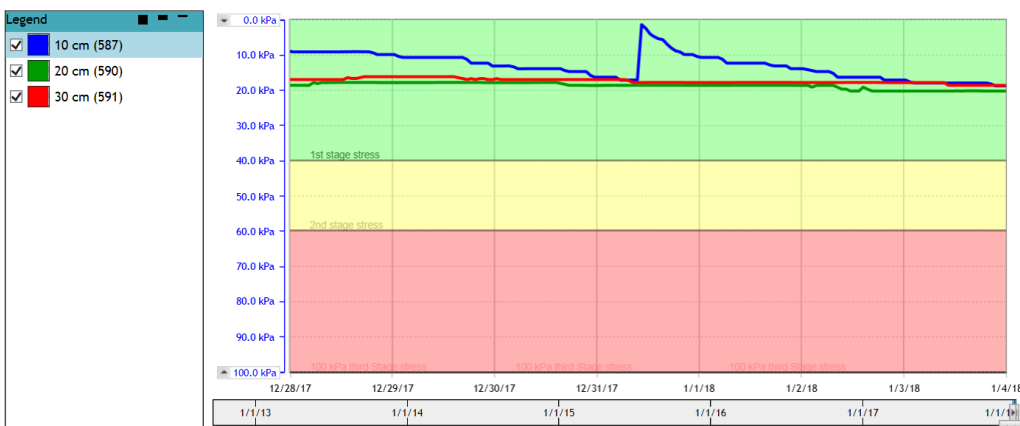
### Allendale East:

Sensors are tracking nicely. Rain last Saturday and cooler temperatures allowed a longer interval until watering last night.



### Mt Schank

The sensors are tracking the same as last week.



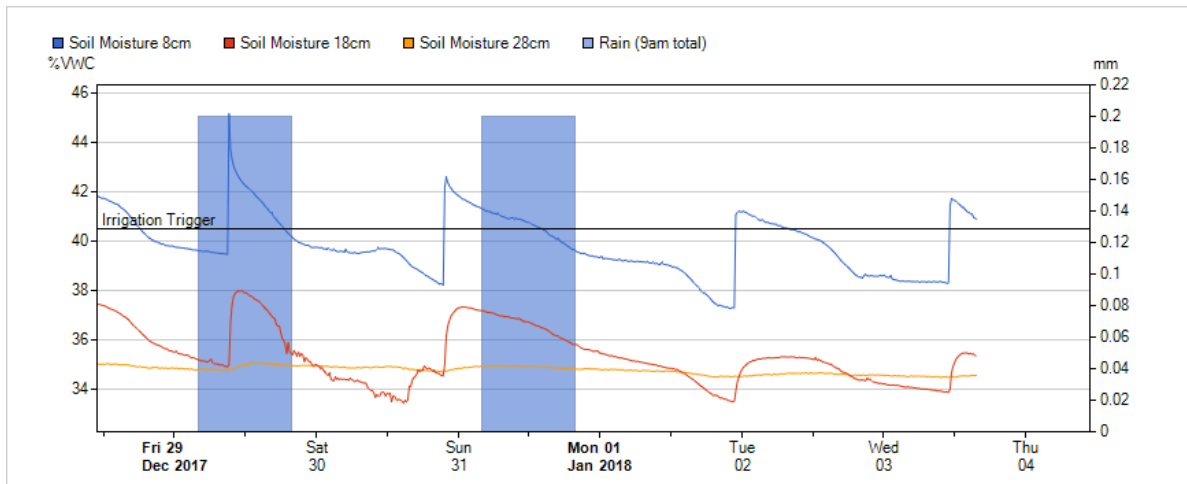
### Eight Mile Creek (pivot 6)

#### Dry Area

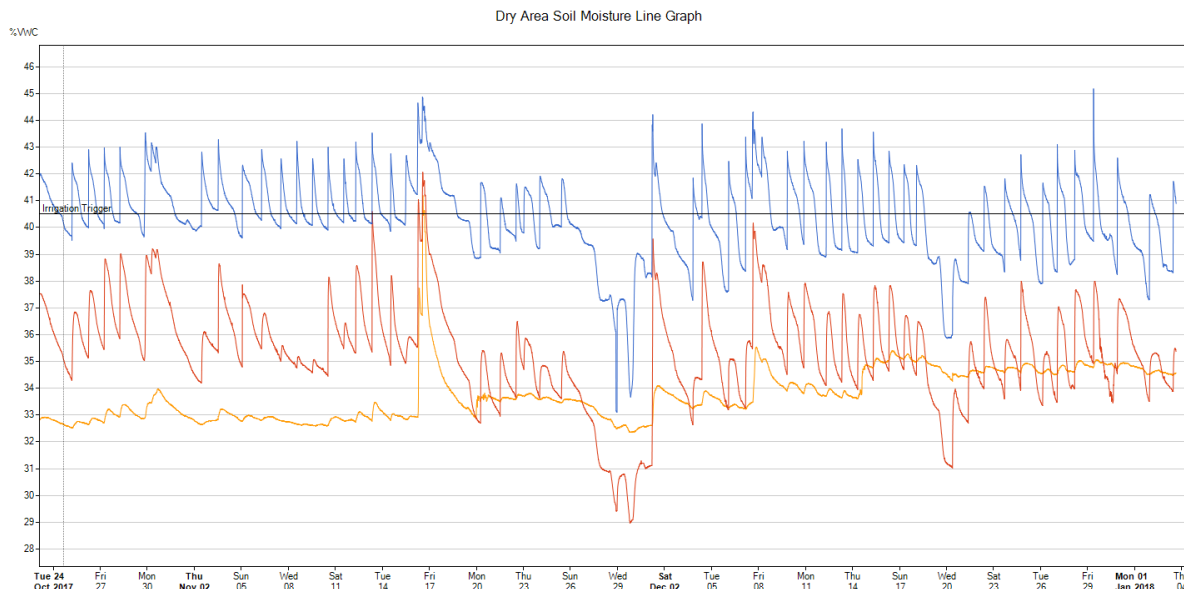
Data looks good, irrigation water is not getting past the root zone. A small rainfall measured at the MacDonnell weather station is showing around midday on Saturday. As mentioned before, the 8cm sensor seems to be getting drier than the irrigation trigger. However, this looks legitimate, given the way the soil moisture is being drawn down. Rick has previously mentioned that the irrigation trigger can change (get lower) through the irrigation season. This may be an example of that happening.

Having a single irrigation trigger may be a bit misleading, as we are only comparing it to the surface sensor, and the other two sensors are arguably more important. What about estimating all three trigger lines and putting them on the chart? The lines could be colour coded to each sensor. However, this risks making the chart very cluttered. A useful compromise might be to put an irrigation trigger line in for the 8cm and 18cm

sensors, but not for the 28cm sensor. This is because the deepest sensor is really just to see how much water is getting past the root zone, and you can tell this from the shape of the data trace.



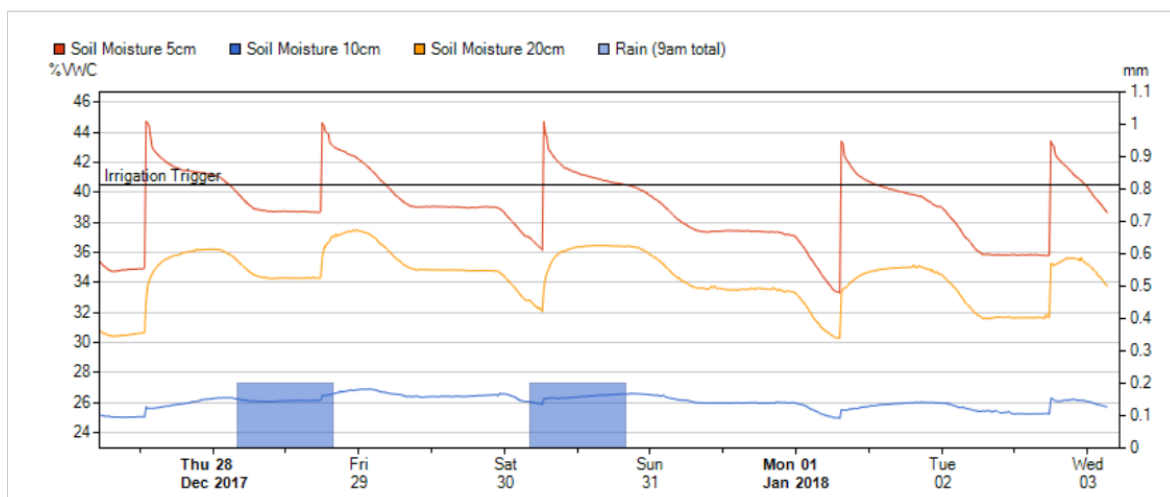
By looking at all of the data from last spring, we can see that the irrigation trigger level for the 8cm sensor (blue) has reduced over time. This may be the case for the 18cm sensor also, although it is a bit difficult to tell.



## Normal Area

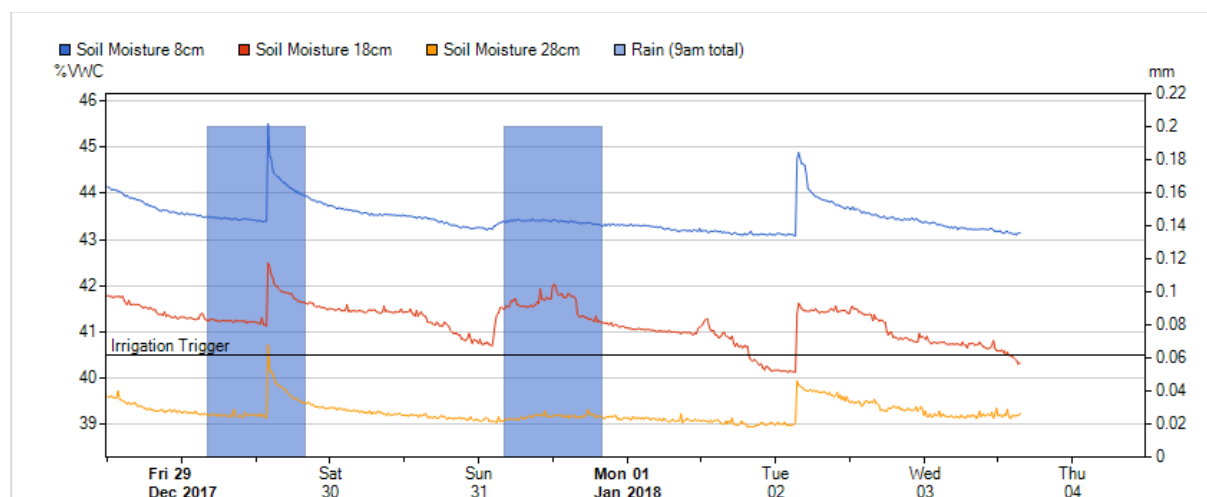
Dare I say it? – the 10cm and 20cm colours need to be swapped around!

Sensors are reading OK and there are no gaps in the data downloaded. Very little water is getting past the root zone. It may also be worth estimating irrigation triggers for the 5cm and 10cm sensors, and putting these on the chart as colour-coded lines.



## Wet Area

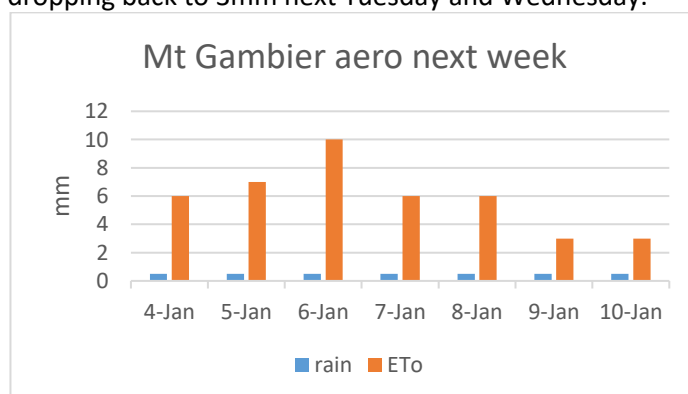
Data looks fine, still seems to be water seeping into the area in addition to irrigation.



## Next 7 days ~ average Evapotranspiration & Rainfall

	ETo (mm/day)	Rainfall (mm)
Mt Gambier aero	5.9	3.5

Traces of rain predicted for the rest of this week. Temperatures climbing from 20's today through to predicted 40° on Saturday, then cooling again. This is reflected in predicted ET rising from 4mm today to 10mm on Saturday then dropping back to 3mm next Tuesday and Wednesday.



## Summary

Temperatures rising over the next few days, peaking on Saturday and dropping back again. Maximum ET of 10mm/day on Saturday. Traces of rain throughout.

Irrigators needed to have applied on average 30.2mm of irrigation water for last week

The predicted weekly pasture water use (ET minus rainfall) for the Mt Gambier area in the next week is 37.5mm

\* These figures are approximate and do not take into account rainfall on farm\*

The intention of this service is not for the information to be used in isolation when making decisions about irrigation scheduling. ETo provides a relatively objective estimate of plant water use and provides another handy 'tool in the irrigation scheduling tool box.' Information in this email is only a guide and should only be used in conjunction with other tools including updated weather information. For improved accuracy, the collection and use of individual farm rainfall measurements is advised.

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